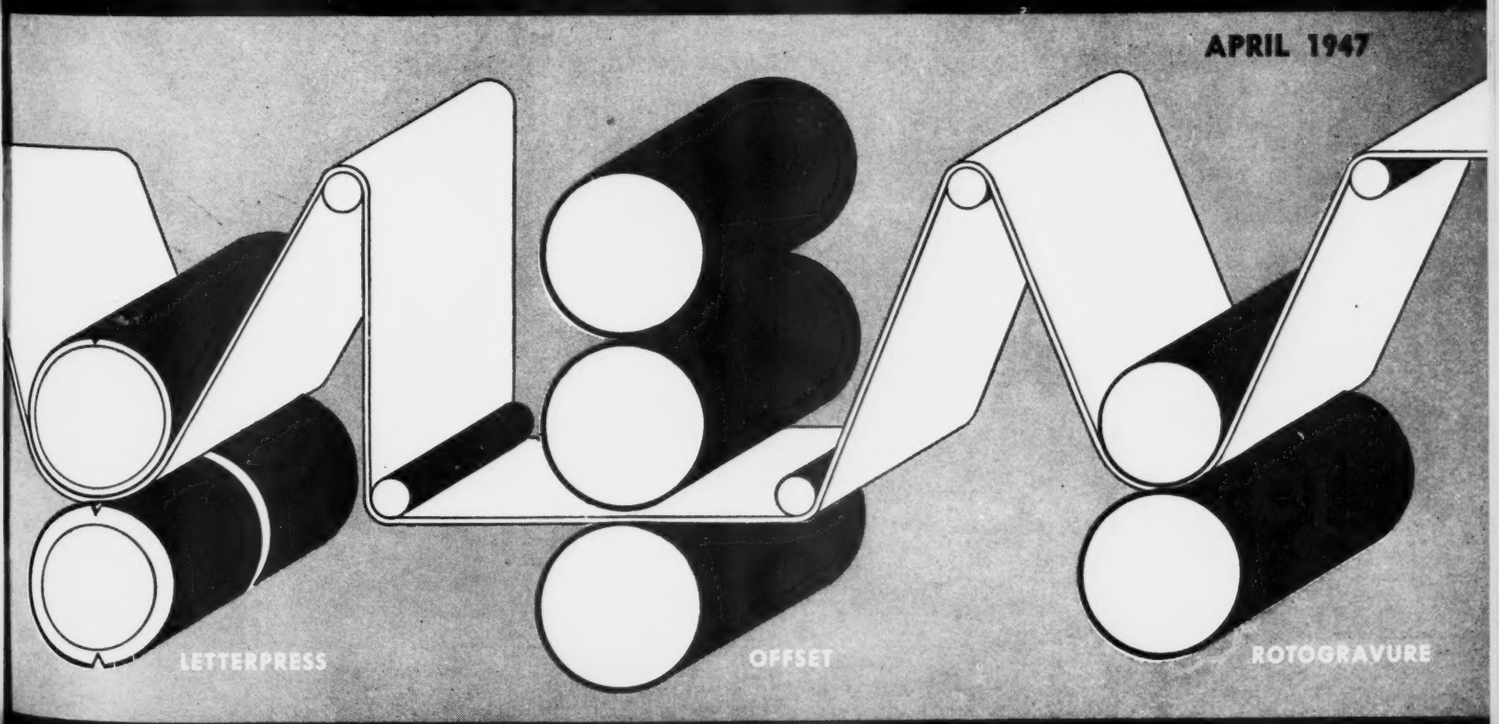
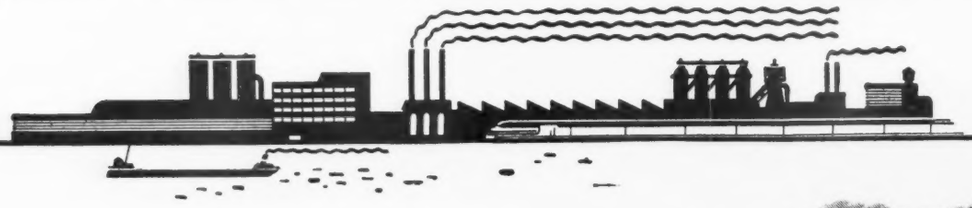
Engineer

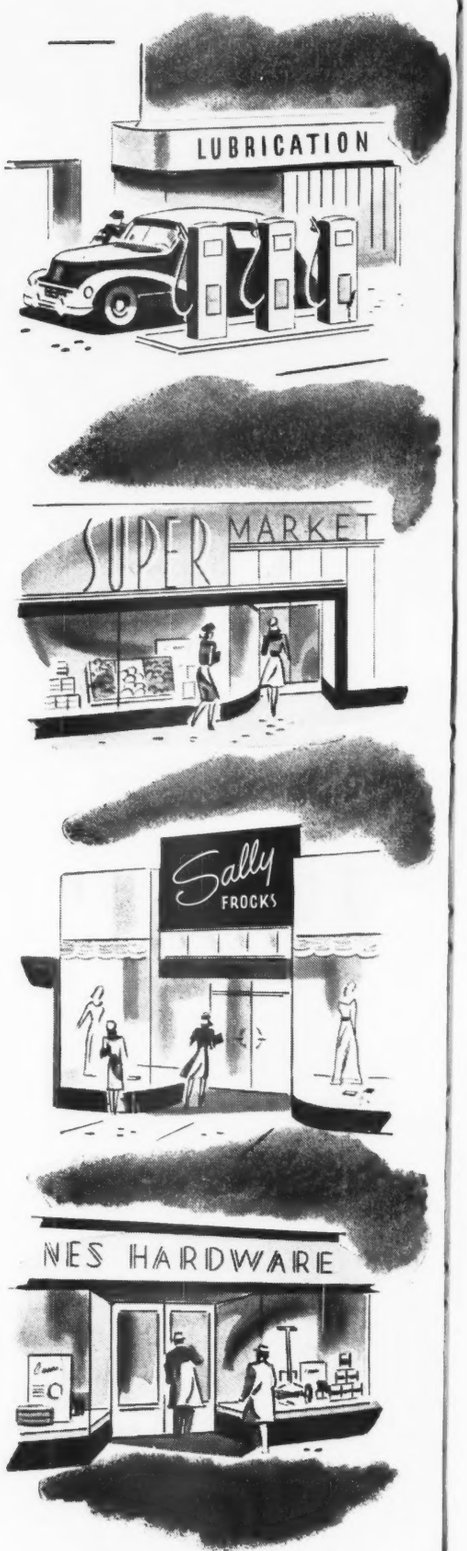
APRIL 1947



HOW OFFSET LITHOGRAPHY SERVES INDUSTRY



Calendars . . .



Think how many persons depend upon calendars in their daily living. Quite frequently, the calendar comprises the major advertising effort of the smaller retail outlets. Day in and day out, calendars do an excellent job of "reminding" and keep their advertising messages alive throughout the entire year.

Offset lithography has long been the logical choice for calendar making. Larger lithographic shops have made a profitable specialty of it. Because calendars can be produced practically any time during the year, smaller shops have found them to be excellent "fillers".

Large spreads of eye-catching color, at minimum plate cost . . . faithful reproduction of color subjects . . . greater press speeds . . . are but a few reasons for the popularity of offset lithography with buyer and producer alike.

The speedy, new Harris 17 x 22″ single-color offset press, with fast plate changes, simple and trouble-free adjustments, four form rollers for superior small-press inking and speeds up to 7,000 sheets per hour, produces an especially high daily quota of salable sheets.

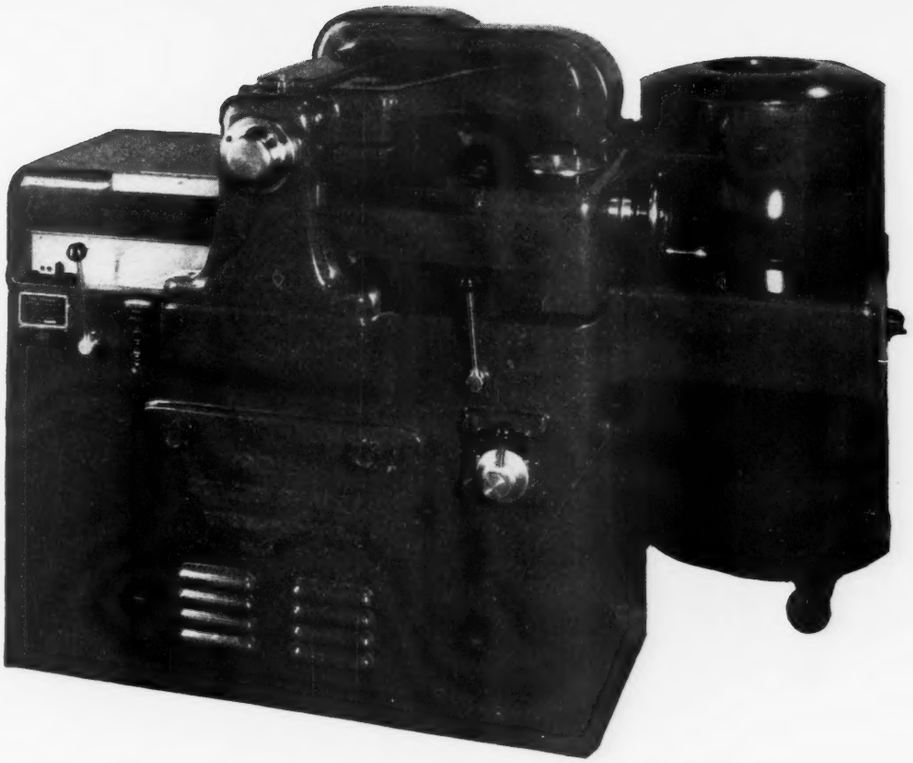
Whether used to run date pads or short-run work in large shops, or as the principal production unit in smaller lithographic or combination shops, no other press of its size will give you a better run for your money.

You will want to read "Why Offset Lithography Is on the March"—a new 24-page, 4-color book produced on the new Harris Model 122, 17 x 22″ Offset Press. It's a sample of work that will interest small offset shops, combination shops or large lithographers. Send for it today.

HARRIS-SEYBOLD

HARRIS PRESSES · SEYBOLD CUTTERS · OTHER GRAPHIC ARTS EQUIPMENT

Harris-Seybold Company • General Offices, Cleveland 5, Ohio



YOU GET ALL-AROUND EFFICIENCY OF OPERATION WITH A PREMIER SHAVER

Currently increasing demand for better printing results has made the Premier Rotary Shaver even more of a "must" on the list of new equipment of newspaper and commercial shops where fine quality counts. To obtain such precision products requires machinery built with care to exact micrometer measurements, and the Premier fills the bill in every step of its design and construction.

With a Premier in your plant you can handle any flat plate shaving job that comes your way in the course of a day's work. You can shave one small plate or a whole bed full at one time—of stereotype or electrotype metal, or wood base.

The Premier is "tops" in ease and speed of operation, and it's built for rugged use over a period of many, many years. Complete details are yours for the asking—why not write or wire us today?

STA-HI

STA-HI CORPORATION • 1020 CROCKER STREET • LOS ANGELES 21, CALIF.

with

Plane-O-Plate

Rotary Shaver

SAVE MONEY... IN YOUR PRESSROOM

START your presses rolling sooner by reducing make-ready time. PLANE-O-PLATE Rotary Shaver eliminates unnecessary make-ready . . . shaves your printing plates to exact height for best reproduction . . . reduces wear on press blankets and tympan . . . makes plates stand up for longer runs. PLANE-O-PLATE does away with makeready problems *before* plates get to pressroom. Allows more running time for presses.

Does Fast, Accurate Work

Precision built, easy-to-read micrometer permits speedy adjustments for precise shaving. Rotary helical cutter shaves evenly . . . leaves no high spots. Provides uniform printing levels for sharp, clear impressions.

Handles All Flat Work

PLANE-O-PLATE shaves stereos, electros, zincs, and wood or stereo base —from .055″ to .940″.

Simple to Operate

Merely place plates on shaver bed, lower chip catcher and press starting button. The rest is automatic. Cutter won't bite, buckle or break printing plates.

Look at these **PLANE-O-PLATE** *Features*

ROTARY CUTTER shaves faster with less motor effort, less strain.

CONTROL BUTTONS are easily accessible, simple to operate. Easy turn of elevator wheel sets cutting depth.

TRIP DEVICE at each end of shaver automatically shuts off motor when table has completed forward or reverse movement.

SAFETY SWITCH stops table if plate is thicker than table is set for.

CHIP CATCHER keeps area around shaver clean and free of muss.

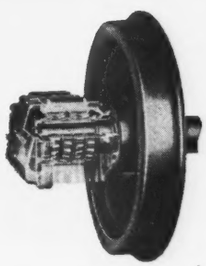
Write Today for new, illustrated folder on PLANE-O-PLATE.

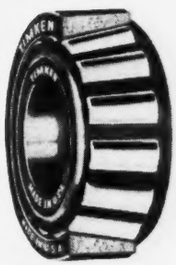
THE MONOMELT COMPANY, INC.

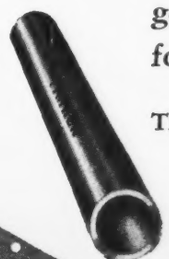
1611 POLK STREET NORTHEAST • MINNEAPOLIS 13, MINNESOTA

TIMKEN

TRADE-MARK REG. U. S. PAT. OFF.

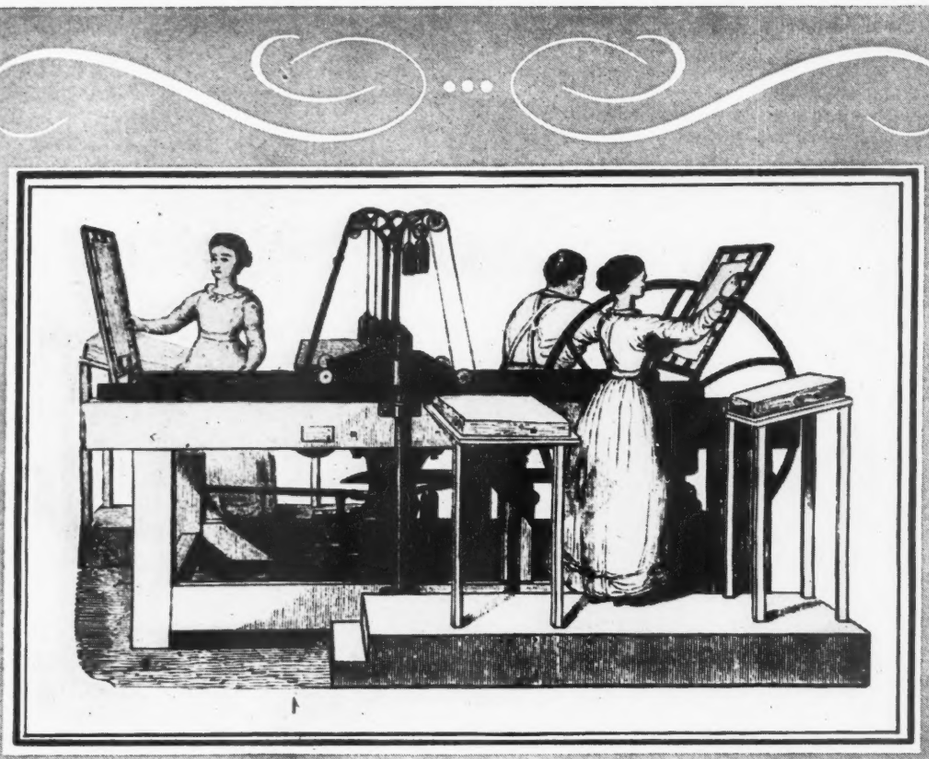






Means "Made By The Timken Roller Bearing Company." It identifies the source of Timken Tapered Roller Bearings, Timken Railroad Roller Bearings, Timken Alloy Steel, Timken Seamless Steel Tubing and Timken Rock Bits. This trade-mark is your assurance of getting genuine Timken products. Look for it when buying.

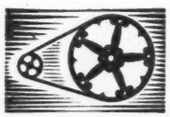
THE TIMKEN ROLLER BEARING COMPANY
CANTON 6, OHIO



TREADWELL'S BED AND PLATEN STEAM-POWER PRESS: Circa 1822

EVEN WHEN STEAM-POWER PRESSES WERE "MODERN"

SAM'L BINGHAM'S SON MFG. CO. rollers were helping printers get better results



Until the kilowatt era, pressmen depended upon the steam engine—or muscle—for power. The earliest American steam-power press was this bed and platen job, invented by Daniel Treadwell, of Boston.

More than 1,000 of these models were put into service, even as late as 1858. When printing was in this creeping stage of infancy, SAM'L BINGHAM'S SON MFG. CO. then was supplying rollers to printers, working with them to make printing better.

Today, too, joining a century of experience with modern technology, SAM'L BINGHAM'S SON MFG. CO. continues to work with America's printers in the development of specific rollers to do specific jobs with greater efficiency and economy . . . Through 16 factories, you can depend upon SAM'L BINGHAM'S SON MFG. CO. for "the right roller right away."

SAM'L BINGHAM'S SON MFG. CO.
MANUFACTURERS OF
PRINTERS' ROLLERS
LITHO-OFFSET ROLLERS

THERE'S A FACTORY NEAR YOU:

ATLANTA 3	DES MOINES 2	KALAMAZOO 12	OKLAHOMA CITY 6
CHICAGO 5	DETROIT 10	KANSAS CITY 6	PITTSBURGH 3
CLEVELAND 14	HOUSTON 6	MINNEAPOLIS 15	ST. LOUIS 2
DALLAS 1	INDIANAPOLIS 2	NASHVILLE 3	SPRINGFIELD, O.

1847-1947
ONE HUNDRED YEARS OF ROLLER MAKING

PRINTING EQUIPMENT *Engineer*

Volume 74 Number 1

A technical publication for the mechanical executive responsible for printing production, equipment and supplies in the commercial, magazine, private plant and daily newspaper field.

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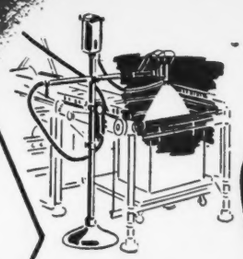
Prevent Offsetting!

GIVE YOUR CUSTOMERS A CLEAN JOB *with*

W-R SPRAYER GUN WAX

- Can be used on all colors successively. No sand-paper effect.
- Harmless to press and operators. Safe to use on food labels and wrappers.
- Makes a fine, light spray or mist that is almost invisible.
- Absolutely colorless. Will not affect the most delicate tints or colors



W-R PROCESS COLOR WAX

- Mixes with any lithograph, offset or letter-press inks —colors or black.
- Assures perfect lifting and blending of colors. Simplifies printing of solids.
- Prevents offsetting, mottling, picking and sticking. Keeps inks from crystalizing.
- Indispensable for transparent colors and process work.

W-R SPRAYER GUN WAX and W-R PROCESS COLOR WAX

have been standard with printers everywhere for nearly half a century

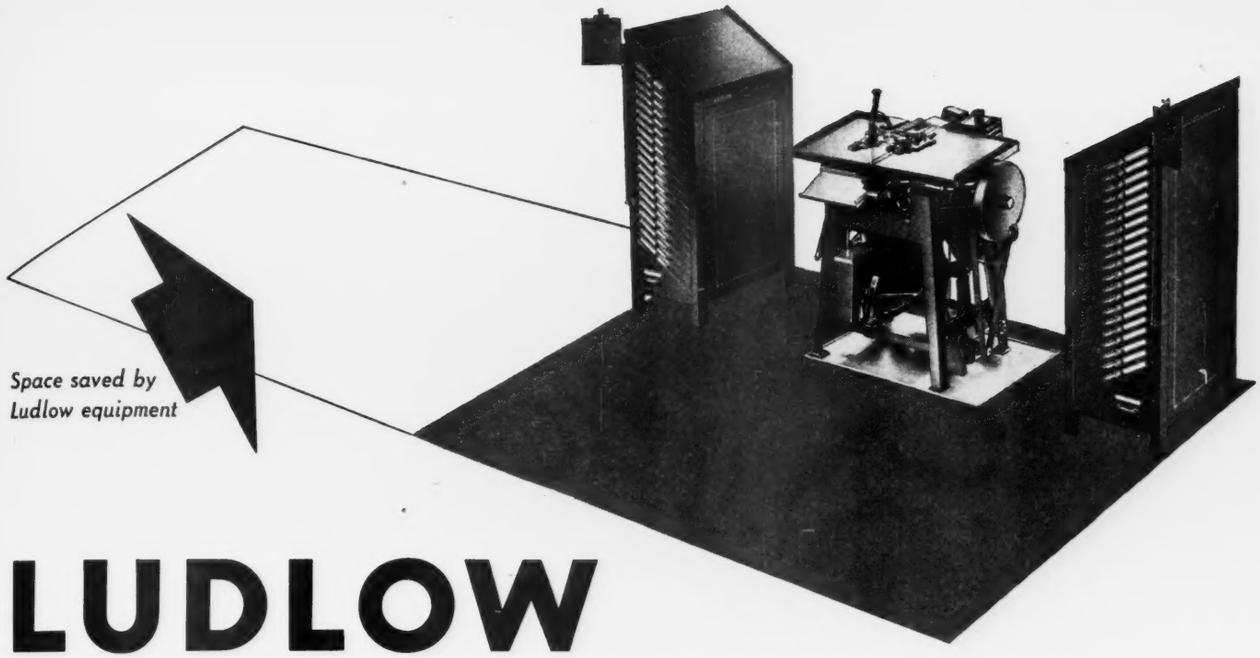
Packed as follows:

W-R SPRAYER GUN WAX	W-R PROCESS COLOR WAX
1 gallon cans	1 pound cans
5 gallon cans	5 pound cans
55 gallon drums	25 pound cans

See your dealer or write for trial shipment today!

WAX REFINING COMPANY

633 PLYMOUTH COURT CHICAGO 5, ILLINOIS



Space saved by Ludlow equipment

LUDLOW

saves you much valuable FLOOR SPACE

Printing or publishing firms which have been compelled to move, or to operate within a greatly reduced floor area, have found the space-saving feature of Ludlow an important factor in helping them to work out many problems in these days when adequate floor space is at a premium.

Ludlow equipment is compact, as the above illustration shows. This equipment, consisting of a Ludlow slug-casting machine, two matrix cabinets and 40 fonts of typeface matrices, with working space for the compositor, requires an unusually small amount of floor space in the composing room. It may be arranged to conform to any floor plan. Additional matrix cabinets can be so grouped as to require but little more floor space.

The compactness of Ludlow equipment also expedites production, as composition and other necessary operations are all concentrated within a small area, avoiding time-wasting "travel" and other disadvantages. Everything that is needed for rapid, efficient composition is within easy reach of the operator, who works with no waste motion.

Besides savings in floor area, the use of Ludlow further provides an unfailing supply of new, clean type in slug form, and makes possible many economies in composing room operation that spell profit for the user.

Got a floor space problem? If so, ask for the facts about the Ludlow and what it could mean in your own plant.

ELROD . . .

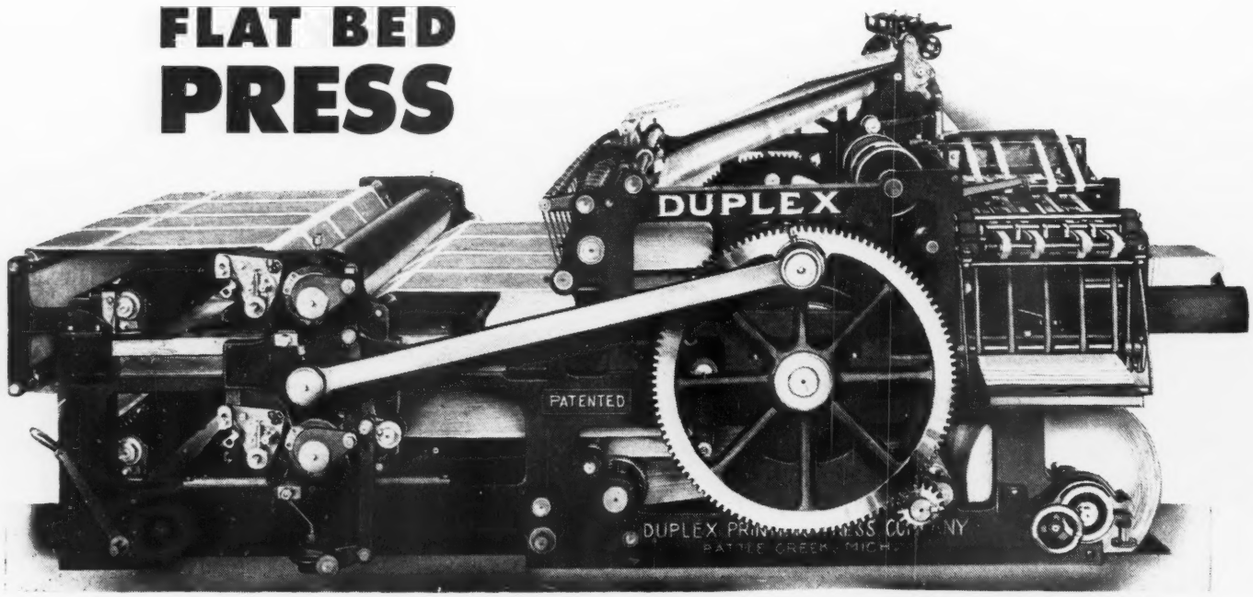
equipment in your plant assures your compositors of an unlimited supply of high-quality leads, slugs, rule and material for base

Ludlow Typograph Company • **2032 Clybourn Avenue, Chicago 14, Illinois**

DUPLEX

ORIGINATOR OF EVERY STANDARD NEWSPAPER-TYPE PRESS IN USE TODAY... MANUFACTURER OF MODERN PRESSES FOR EVERY SIZE NEWSPAPER . . . FROM GREAT METROPOLITAN DAILIES TO SMALL PROGRESSIVE PLANTS WHERE THE NEED IS FOR VERSATILE EQUIPMENT SUCH AS THIS

FLAT BED PRESS



MODEL "A" WEB PERFECTING

PRINTING on both sides of a web of newsprint, the "Model A" delivers your newspapers cut, folded, and counted. Famous Duplex Flat Bed design gives you finest possible reproduction from type, cuts, and flat-cast stereo plates. Forms can be kept open right up to press time.

"Model A" Duplex provides the means of keeping production costs constantly low while maintaining highest production quality. An ideal press for weekly or limited circulation dailies.

THE DUPLEX PRINTING PRESS COMPANY

Builder of the World's Finest Newspaper Presses

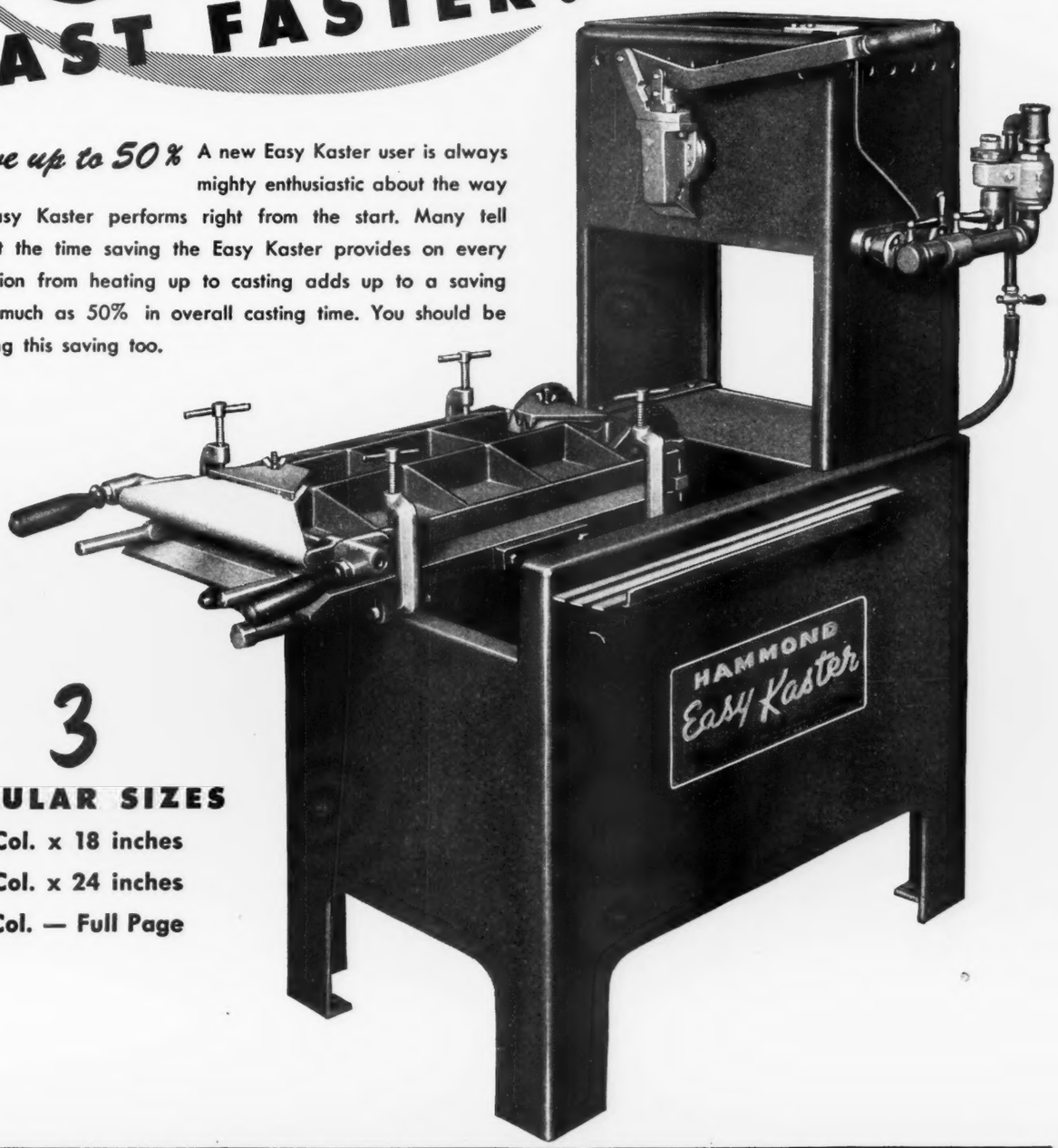
77 W. Washington Street, Chicago — **BATTLE CREEK, MICHIGAN** — 500 Fifth Avenue, New York

HAMMOND

Easy Kasters

CAST FASTER!

Save up to 50% A new Easy Kaster user is always mighty enthusiastic about the way the Easy Kaster performs right from the start. Many tell us that the time saving the Easy Kaster provides on every operation from heating up to casting adds up to a saving of as much as 50% in overall casting time. You should be enjoying this saving too.



3

POPULAR SIZES

5 Col. x 18 inches

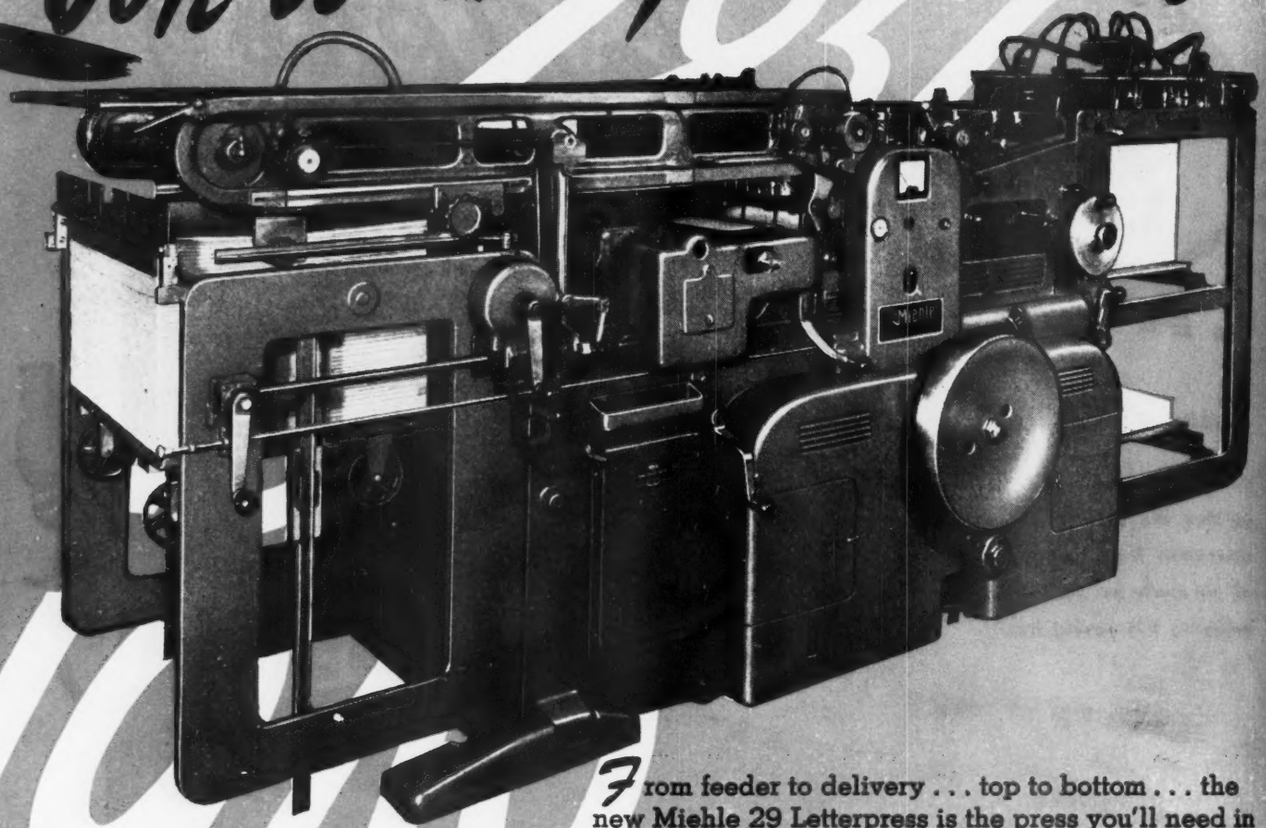
6 Col. x 24 inches

8 Col. — Full Page

Hammond Machinery Builders INC.

1604 DOUGLAS AVENUE • KALAMAZOO 54, MICHIGAN

Look to the years ahead...



From feeder to delivery . . . top to bottom . . . the new Miehle 29 Letterpress is the press you'll need in the highly competitive years just ahead—As well as right now, when high production and top quality work are at a premium. Engineered to tomorrow's requirements, the 29 is fastest where the most time is generally lost: in makeready, adjustments and changeovers. Fewer stops after the run has started result in more sheets per day.

Get the whole story on the 29 from your Miehle Representative or write us direct . . . The Miehle 29 Letterpress is well worth knowing about—and waiting for.

Miehle 29 Feature Highlights

- *New Dexter Feeder* that shifts from stream feeding to sheet-by-sheet at the touch of a lever!
- *Sheet Transfer Mechanism* gives positive sheet transfer at cylinder surface speed for precise register.
- *New Bed Motion,* invented and developed by Miehle Engineers for *smooth* high speed printing.
- *Great Impressional Strength* with one-piece box-type casting and overhead cylinder-impression eccentrics.
- *Chain Delivery* for positive sheet control.
- *Automatic Lubrication* to all main bearings.

CONDENSED SPECIFICATIONS MIEHLE 29

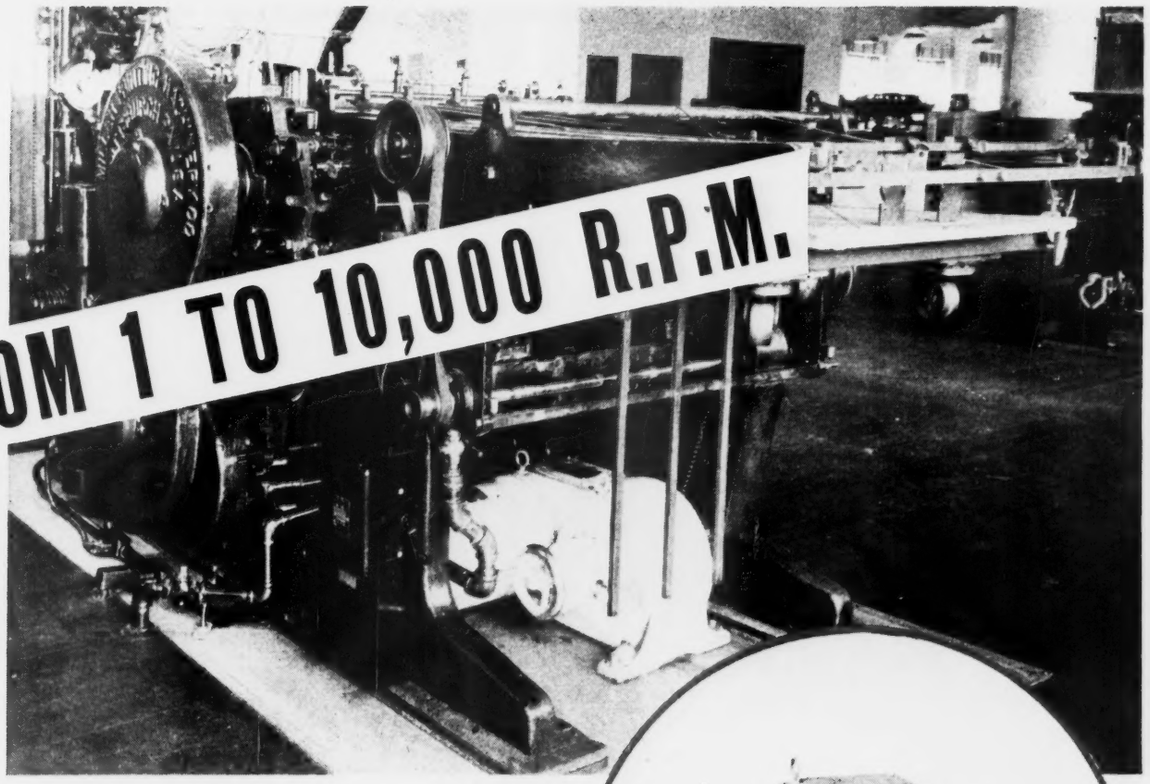
- Speed Range 2500 to 4500 I.P.H.
- Sheet Size Minimum 8½ x 11
  Maximum 22 x 28
- Printing Surface
  Locked in Chase 20¼ x 26
  Locked in Bed 20¼ x 27
- Capacity of Feeder 34" pile
- Capacity of Delivery 34" pile
- Approximate Weight (net, including electrical equipment) 10,260 lbs.

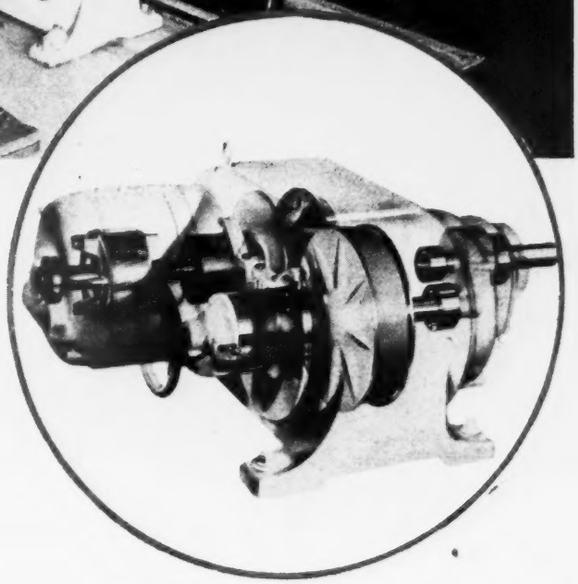
MOTORED BY KIMBLE

THE MIEHLE 29 LETTERPRESS
product of 29 years of development

MIEHLE PRINTING PRESS & MFG. CO.
2011 Hastings Street (14th & Damen) Chicago 8, Illinois

FROM 1 TO 10,000 R.P.M.





● *Varidrive Motor built by*
U. S. ELECTRICAL MOTORS, INC.

Pressmen and plant superintendents ended their search for a simplified variable speed unit when SKF-equipped U. S. Varidrive Motors were installed on job and cylinder presses; offset presses; folding, stapling and gathering machines; monotype casters, and punching, perforating and ruling machines. Now, they have a quick change to any speed from 1 r.p.m. to 10,000 r.p.m. during machine operation—plus freedom from bearing trouble. SKF Bearings provide continuous, carefree performance and properly aligned armatures, practically no wear, longer motor life, and lower maintenance costs. If you are interested in *lowering your power costs and increasing your production equipment efficiency,* ask our engineers for further information concerning these SKF-equipped units.

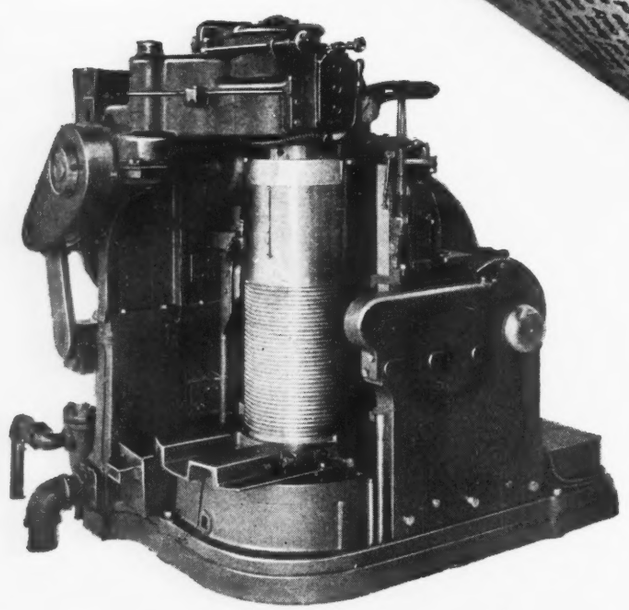
6242

SKF INDUSTRIES, INC., PHILADELPHIA 32, PA.

SKF
Puts the
RIGHT BEARING
in the
RIGHT PLACE

Wood
NEWSPAPER
MACHINERY

TYPICAL WOOD AUTOPLATE EQUIPMENT NOW IN FULL PRODUCTION



AUTOMATIC
AUTOPLATE

WOOD NEWSPAPER MACHINERY CORPORATION PLAINFIELD, N. J. • NEW YORK OFFICE: 501 FIFTH AVENUE, NEW YORK 17, N. Y.

NEW METHOD OF ELIMINATING STATIC
operates continuously and efficiently without power

Decreases hazards, increases production, decreases waste . . . operates without cost . . . requires no maintenance . . . lasts a lifetime

The Ionotron Static Eliminator* employs continuous alpha radiation to ionize the air in zones where static electricity is a production problem or fire hazard. The ionized air bleeds-off the static charges before they can cause trouble. Sheet control is improved in feeders. Paper delivers properly. Jogging becomes uniform. And often presses can be run at higher speeds with less waste!

NO POWER CONNECTION—The Ionotron Static Eliminator not only has no moving parts – it requires no power connection nor accessory apparatus, and there's no operating cost. The Ionotron consists of a continuous alpha-ray source mounted in a bar-type housing. Units can be furnished in any required length for rotary, flat bed, offset, or roto presses, and for various types of bindery equipment.

EFFECTIVE FOR MANY MATERIALS — The Ionotron reduces static charges in paper, foil, fabric, and other materials. It is especially valuable in the printing of acetate, cellophane, or lightweight stocks, with which the worst static problems are encountered. The cost of an Ionotron Static Eliminator, installed, is low in relation to the savings it provides.

IONOTRON

U S RADIUM

STATIC ELIMINATOR

**Trade-mark Reg. U. S. Pat. Off.*

SEND COUPON FOR SPECIFIC INFORMATION!

Dept. H3, U. S. Radium Corp.
535 Pearl Street, New York 7, N. Y.

I want to know how the Ionotron Static Eliminator can solve static problems in my shop. This inquiry does not obligate me in any way.

Name_____ Title_____

Company_____

Address_____

City_____ State_____

Type of press_____ No._____

Max. web or sheet size_____

Type of delivery_____

Type of static eliminator now used_____

THE PRINTED PAGE

We depend on the pressman to keep newspaper presses rolling at top speed so that readers will have an accurate record of current events while the news is fresh. Newspaper pressmen throughout the United States know they can count on MORRILL to deliver the inks on time, and in the quantity they need, so that production will not be interrupted or delayed.

No sale of MORRILL ink is considered complete until the ink is running satisfactorily on the press. Every MORRILL representative is a trained ink man at the service of the pressman.

Reliable service on newspaper inks that can be depended upon for uniformity and workability has been the responsibility of Geo. H. Morrill for 107 years.

A nation-wide service from coast-to-coast assures the physical availability of ink for every newspaper—large or small. By building this service we have built the world's largest business in newspaper ink.

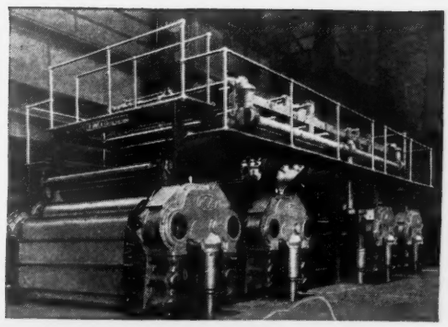
GEO. H. MORRILL
GENERAL PRINTING INK DIVISION
100 SIXTH AVENUE, NEW YORK 13, N. Y.

FACTORIES: *Norwood, Mass. · Chicago, Ill. · Tacony, Pa. San Francisco, Cal. · Los Angeles, Cal.*

BRANCHES: *Boston · New York · Chicago · Philadelphia Detroit · St. Louis · Forth Worth · San Francisco · St. Paul Los Angeles · Seattle · Toronto*

Sun CHEMICAL CORPORATION

Yesterday



Today

— Hoe cleanlining minimizes non-productive time

Cleanlined design

OF *NEW* HOE COLOR-CONVERTIBLE NEWSPAPER PRESS

MAKES TODAY'S MODEL

Simpler to Operate
Safer to Adjust
Easier to Maintain
More Convenient to Expand

• **Simpler to operate — because** in Hoe design such important factors as the ink distribution, plate lock-up, web threading, color switching, folding and cutting, tension control and web splicing have been greatly simplified.

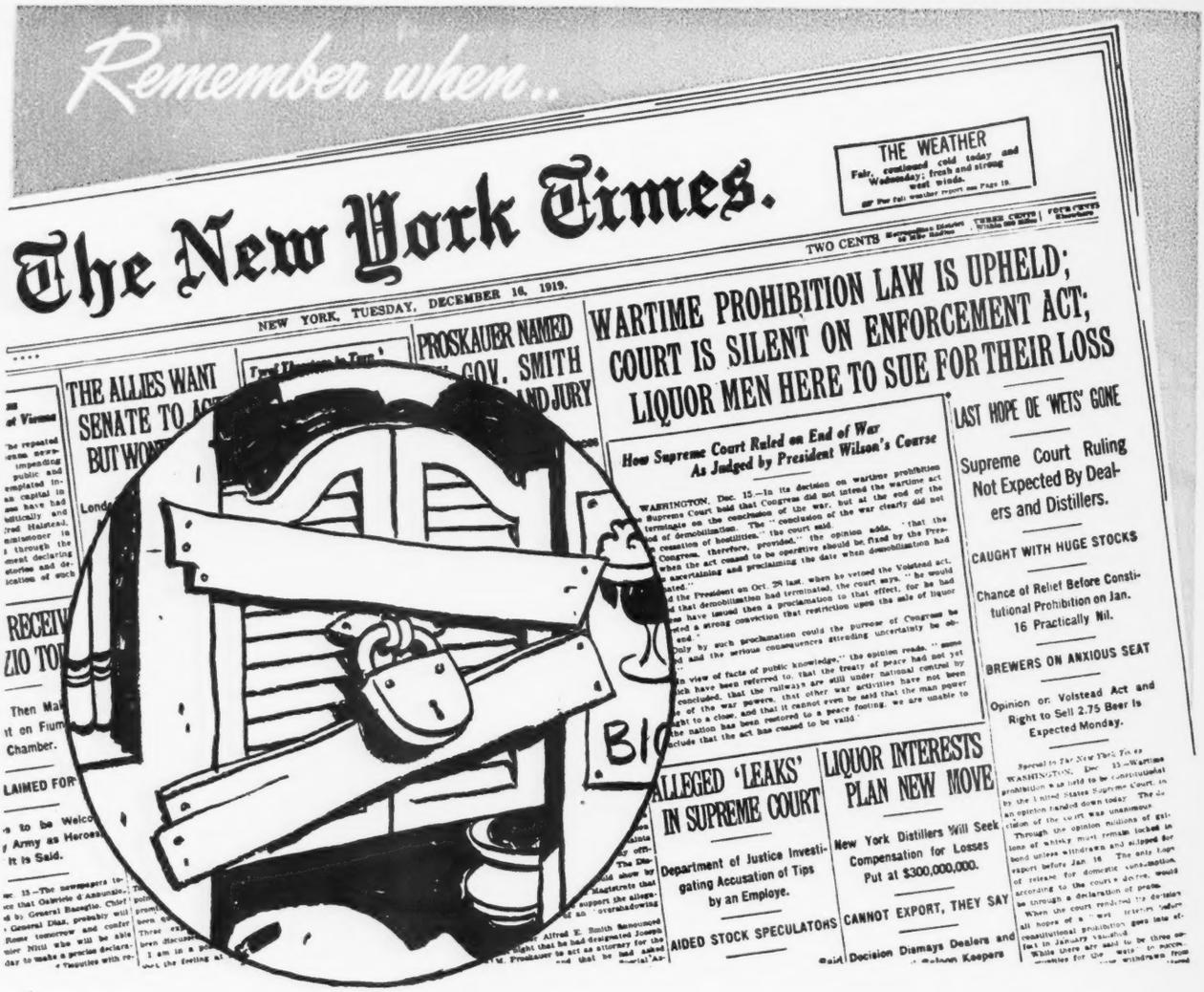
• **Safer to adjust — because** in Hoe design safety features are outstanding. All necessary adjustments to the press and folder are made quickly and easily from outside the press.

• **Easier to maintain — because** in Hoe design all moving parts are readily accessible, assuring ease of maintenance.

• **More convenient to expand — because** in Hoe design additional color facilities can be added to the press at any time without extensive dismantling or scrapping of existent parts.

HOE

R. Hoe & Co. Inc., 910 E. 138th St., New York 54, N. Y.
BRANCHES: CHICAGO • BOSTON • SAN FRANCISCO


Remember when..
The New York Times.
THE WEATHER
NEW YORK, TUESDAY, DECEMBER 16, 1919.
TWO CENTS
WARTIME PROHIBITION LAW IS UPHELD; COURT IS SILENT ON ENFORCEMENT ACT; LIQUOR MEN HERE TO SUE FOR THEIR LOSS
How Supreme Court Ruled on End of War As Judged by President Wilson's Course
LAST HOPE OF 'WETS' GONE
Supreme Court Ruling Not Expected By Dealers and Distillers.
CAUGHT WITH HUGE STOCKS
Chance of Relief Before Constitutional Prohibition on Jan. 16 Practically Nil.
BREWERS ON ANXIOUS SEAT
Opinion on Volstead Act and Right to Sell 2.75 Beer Is Expected Monday.
ALLEGED 'LEAKS' IN SUPREME COURT
Department of Justice Investigating Accusation of Tips by an Employe.
LIQUOR INTERESTS PLAN NEW MOVE
New York Distillers Will Seek Compensation for Losses Put at $300,000,000.
CANNOT EXPORT, THEY SAY
AIDED STOCK SPECULATORS
PROSKAUER NAMED
GOV. SMITH
THE ALLIES WANT SENATE TO

Dayco Printing Roller Experience goes back to 1919, too!

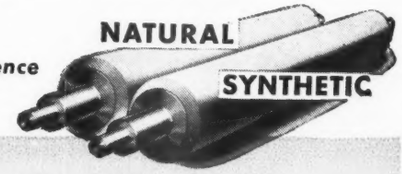
A lot of ink has gone over printing rollers since barrooms were shut . . . days of "bathtub gin", rum runners, The Roaring Twenties . . .

Those were the years Dayton Research was finding ways and means to produce better natural rubber newspaper rollers. Printing rollers that could be used the year 'round—regardless of temperature and humidity—that wouldn't melt in the summer, chip or crack in the winter. Then, in 1933, Dayton rang the bell for newspapers throughout the world when it developed the first successful synthetic rubber printing roller—the first roller able to stand the gaff of today's high-speed presses. On this early beginning, Dayton has been continuously building finer rollers for the newspaper presses of America.

If you are not yet a Dayco user, write today for full information on great new Daycos—of both natural and synthetic rubber. Address: Dayton Rubber, Dayton, Ohio.

When you go to press . . . GO DAYCO!

1919-1947 *over a quarter of a century of printing roller experience*



Dayton Rubber

THE MARK OF TECHNICAL EXCELLENCE IN NATURAL AND SYNTHETIC RUBBER

Four Sperry giants of creative engineering – the electrical, hydraulic, mechanical and electronic skills – are massed for the making of the **Sperry Printer** – the mighty answer to the great need for *better* and *faster* printing.

The **Sperry Printer** will be another living testimonial of printing progress . . . a mark of assurance that Sperry intricate precision engineering has been directed to the printing industry.

The **Sperry Printer** – combining the teamwork and creative productivity of the Sperry organizations – will provide more precise performance at higher speeds.

This urge to lead the way – in the printing industry – is another example of Sperry's pioneering spirit known the world over!

The Sperry Corporation

E. G. STAUDE DIVISION

NEW YORK	ST. PAUL	CHICAGO	EXPORT
FORD INSTRUMENT BLDG. 31-10 THOMSON AVENUE LONG ISLAND CITY 1, N. Y. STILLWELL 4-9000	2675 UNIVERSITY AVENUE ST. PAUL 4, MINN. NESTOR 7151	2400 W. MADISON STREET CHICAGO 12, ILL. SUITE 615 MONROE 3480	FORD INSTRUMENT BLDG. 31-10 THOMSON AVENUE LONG ISLAND CITY 1, N. Y. STILLWELL 4-9000

Relief Embossing at *Printing Press Speed* with GAS

Gas-fired tunnel radiant burner through which printed cards pass to complete the embossing process.

Battery of Gas-fired tunnel burners with conveying systems. Note varying lengths of tunnels for different sized forms.

WHEN you finger that nicely embossed business-card the salesman offers you'll probably find it's one of those attractive cards which simulate an engraved texture by the heat-polymerization of ink.

Relief Printing Corporation, Boston, Massachusetts, pioneer manufacturer of embossed business cards, stationery, professional announcements, has developed a real production-line method for heat processing the ink *at press speed*. It's a simple process, too, for Relief Printing Corporation uses GAS and modern Gas Equipment to obtain the high temperatures required for rapid changes in the chemical inks.

Automatic flat bed presses feed the printed cards to a hopper which spreads the powdered ink on the card and removes the excess powder by suction. Continuous chain conveyors carry the cards through a three-second polymerization cycle under Gas-fired radiant tunnel burners operated at 1600° where the powdered ink is transformed into an embossed surface closely resembling engraving.

GAS and modern Gas Equipment are the ideal production-line tools for every printing and publishing function requiring heat. Your local Gas Company will assist you in selecting the proper Gas Equipment for any production heating requirement.

MORE AND MORE...

THE TREND IS TO GAS

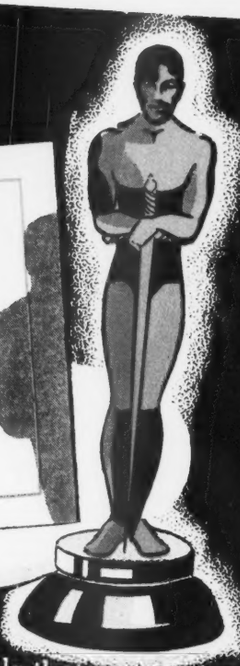
FOR ALL INDUSTRIAL HEATING

AMERICAN GAS ASSOCIATION

420 LEXINGTON AVENUE, NEW YORK 17, N.Y.

GOSS

TOP PERFORMANCE BRINGS *Repeat Orders*



Every manufacturer feels that repeat orders demonstrate customer confidence in his product. That's why GOSS is proud of the two unsolicited letters, reproduced herewith, that came to us with contracts for new GOSS HEADLINER PRESSES.

The Cincinnati Enquirer
One of the World's Greatest Newspapers

Office of
The Publisher

November 20,1946

Mr. R. C. Corlett,
President,
The Goss Printing Press Co.,
1535 South Paulina St.,
Chicago, 8, Illinois

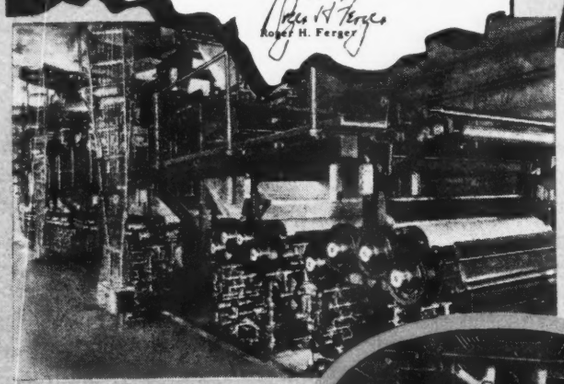
Dear Mr. Corlett:

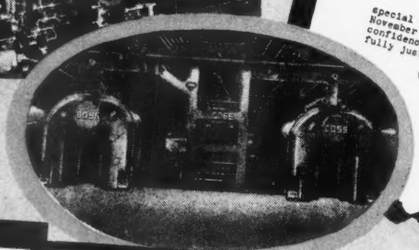
Thank you for your nice letter of November 18th.

Frankly, I am happier over the prospect of the Enquirer getting this marvelous new Goss Press than your company could be in receiving the order for it.

In the light of the great performance over the past twenty years of our present Goss installation, - I must admit we were honestly biased in favor of Goss for the new press even before Mr. Reilly so ably outlined to us the advantages of what I believe he rightly terms "the last word in newspaper presses."

Sincerely yours,
Robert H. Ferger





The Birmingham News
THE BIRMINGHAM AGE-HERALD
Birmingham 2, Ala.

December 9, 1946

Mr. R. C. Corlett, President
The Goss Printing Press Company
1535 South Paulina Street
Chicago 8, Illinois

Dear Mr. Corlett:

The signed and acknowledged contract for the new press units reached my desk this morning. I am certainly happy that we could be in a position to go along with you in this prospective addition to our present facilities.

When we turned out 180,000 sixteen-page papers on a special run for a section of our Sunday paper Saturday evening, November 30, 1946, in an hour and forty minutes, I felt every confidence we had placed in this new machine of ours had been fully justified.

With kindest regards and every good wish,

Sincerely,

THE GOSS PRINTING PRESS COMPANY
1535 SOUTH PAULINA STREET • CHICAGO 8, ILLINOIS
NEW YORK 17 SAN FRANCISCO 5 PRESTON, ENGLAND

Here's what you need for CLEANER impressions with LESS wear....

TINGUE

TRADE MARK

PRINTING PRESS BLANKETS

TINGUE Drawsheets and Printing Blanket

TOP

This drawsheet is firm, durable, economical and long-lived.

IMPROVED SATISFACTION

Coated with "Calvaprene" by du Pont, on a fabric which has been impregnated with "Neoprene."

GOLD TYMPAN CLOTH

An old favorite for Flat Bed Presses. Skivered metallic surface accepts excess ink and flakes it off without smudging.

COMBINO

A synthetic, laminated top blanket, extremely durable and a clean printer.

TINGUE Underblanket Press Packing

CUSHION CORK BLANKETS*

Highly resilient and recommended as the underpacking for "Combino" and Tingue coated Felt or in combination with "Foundation" Blanket or "Korker" where a drawsheet is used.

KORKER

This new Tingue printing press blanket is the result of years of experience and research in the construction of blankets and drawsheets.

FOUNDATION BLANKET

A firm durable oilproof underpacking laminated by du Pont with "Neoprene" for use in combination with "Cushion Cork", "Korker" and Tingue Drawsheets or Felt.

WOOL FELT BLANKETS

Coated and uncoated, available in your gauge and size.

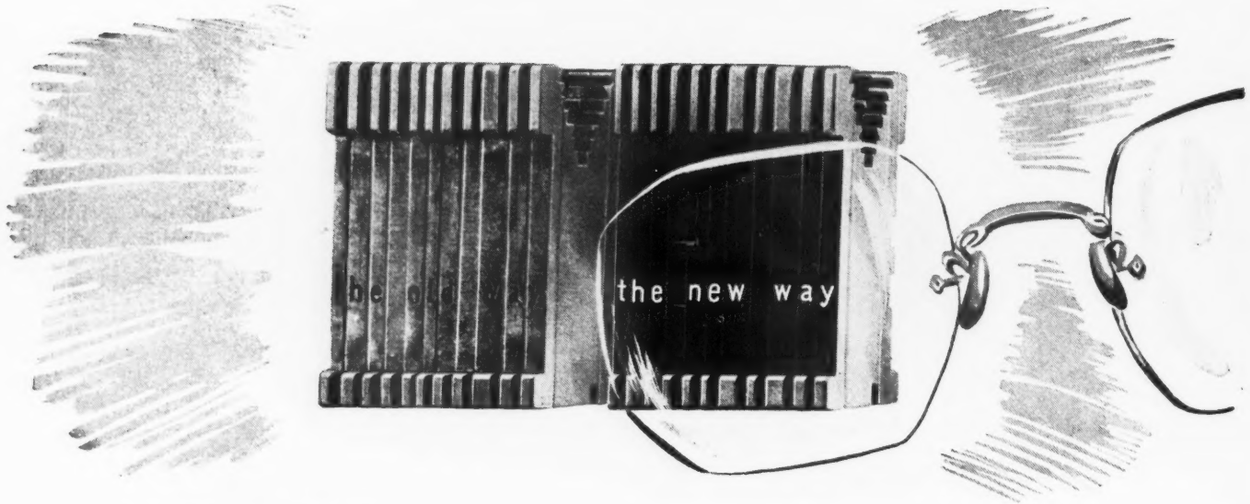
*Reg. U. S. Patent Office

TINGUE BROWN AND COMPANY

114-120 EAST 23rd STREET, NEW YORK 10, N. Y.
1227 WABASH AVENUE, CHICAGO 5, ILLINOIS
723 E. WASHINGTON BLVD., LOS ANGELES 21, CAL.
507 PETERS STREET, S. W., ATLANTA, GEORGIA

CANADIAN SALES AGENTS
ROSS WHITEHEAD & CO., LTD.
MONTREAL, CANADA

Just like putting on a



NEW pair of glasses

Among linecasting machine operators eyestrain is a common complaint. In fact, a high percentage of all printers have defective vision in a measurable degree. That is why Matrix Contrast Service is doing such an important job in reducing eyestrain among operators.

Black and White processed reference marks have a visibility factor equivalent to 9½ point type as compared with 3-point for used, non-processed matrices. Whether an operator is 20 or 60 years old, with 20/20 or 10/20 vision, Matrix Contrast Service will aid in setting cleaner type — an average of ⅓ fewer errors—with less effort, less eyestrain, and consequently, less fatigue. By giving your operators the visual advantages of contrast matrices, you'll get more output, fewer errors and, most important, a definite improvement in employee relations.

Matrix Contrast Service also includes the optional use of colors—red, green, yellow or orange—to distinguish different fonts. Write today for the latest information on the many advantages of Matrix Contrast Service.

Matrix Contrast Service

MATRIX CONTRAST CORPORATION, Empire State Building, New York 1, N. Y. — 326 W. Madison Street, Chicago 6, Ill.—1105 Trenton Street, Los Angeles 15, Calif.—Sole licensees of the Percy L. Hill Matrix Contrast Patent No. 1,796,023, other patent pending. European Agents: Funditor, Ltd., 3 Woodbridge Street, Clerkenwell Green, London, E. C. 1.

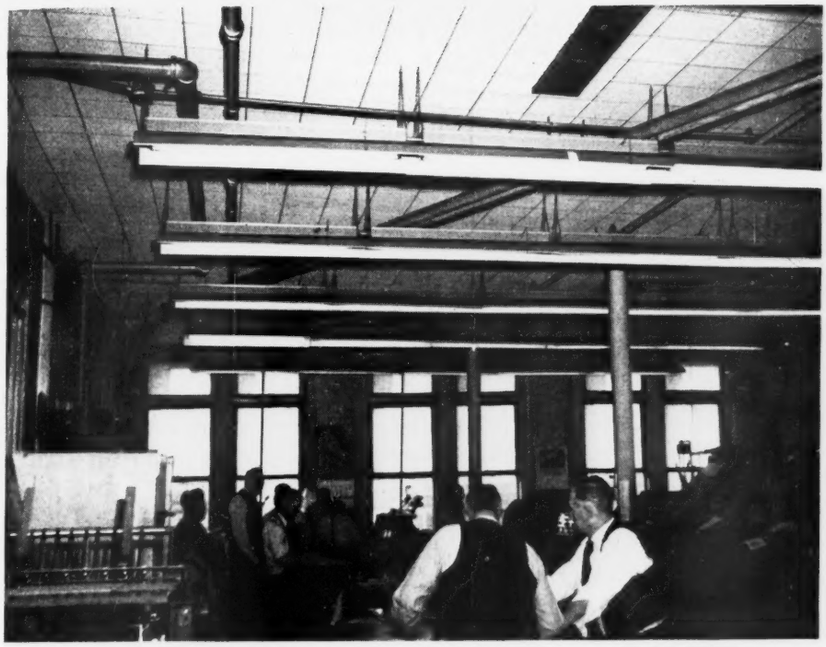


Fig. 1.—Acoustical ceiling in plant of The News Printing Co., Tarentum, Pa., in which plant is printed *The Valley Daily News*.

Sound Conditioning

in newspaper plants — By-result is increased winter warmth and greater summer coolness

By FRANCIS A. WESTBROOK

APPLICATIONS of sound conditioning in newspaper plants are of much interest and are giving results of sufficient importance to warrant attention. Among the more recent installations is one by The News Printing Co., publisher of *The Valley Daily News*, Tarentum, Pa. and another by *The Brockton* (Mass.) *Enterprise-Times*. The success attending both of these would make it appear likely that they indicate a trend which is becoming wide spread.

In the case of The News Printing Co., the question of acoustical treatment came up in connection with an extension to its plant, and a considerable revamping of the existing layout. It was felt that that was the proper time to improve working conditions insofar as practicable and that the abatement of noises arising from the operations carried on in the various working areas would be an important step in this direction.

Consequently the ceilings in the stereotyping department, commercial job and composing room were treated by installing acoustical tile. In addition to the mechanical departments acoustical tile was also installed on the ceilings of the editorial and advertising rooms, in the business office and circulation department. In all about 6000 sq. ft. of tile was used.

The application of tile was made after consultation with the company's architect and in accordance with the recommendations of the acoustical engineering contracting concern which supplied the tile. In this instance treatment of the ceilings alone was sufficient as the latter are not high. Where ceilings are high and other conditions perhaps also unfavorable, it may be necessary to apply the acoustical tile part way down the side walls in order to absorb reflected sounds or to prevent reflections.

In the editorial rooms and business office the tile was cemented to the plaster. In the other areas it was nailed to furring strips. It was not necessary to interrupt the normal activities in those departments while the work was carried on. Fig. 1 shows the ceiling in the mechanical department with the tile in place. It is interesting to note that it has been applied to the vertical sides of the roof girders, as well as to their under sides, and that the tile gives a neat and finished appearance. The small sound-absorbing perforations in the fibrous material are not at all unpleasing. The material may by painted whenever desirable by ordinary methods without impairing its efficiency.

The management reports that it is pleased with the results. All department heads say that the efficiency of the workers has been increased by reason of the noise abatement and that the cost of sound conditioning is consistent with the advantages being realized.

Similar satisfaction has been realized in the composing room of *The Brockton* (Mass.) *Enterprise-Times*, although the sound deadening effect came as rather a surprise. This installation was made primarily because the old plaster ceiling was falling and dust got into the Linotype machines. Wooden furring strips were nailed to the old wood lath and plaster ceiling over the Linotype machines and to them was nailed Type C-1 Acousti-Celotex tile in sizes of 12 in. by 12 in. by ½ in. thick. In other words it was necessary to repair the ceiling and it was decided to do it with the acoustical tile and get whatever additional benefit might accrue. The extent of that benefit was an agreeable surprise.

The management states that the men working in that end of the composing room say the new ceiling makes it warmer in winter and cooler in summer, due to the heat insulating properties of the tile, and that there is no question but what it deadens the sound of some 12 Linotype machines, including the advertising machines, under that section of the ceiling. The results have been so satisfactory that treatment of the rest of the ceiling is contemplated in the near future.

The experience of these two newspapers is entirely consistent with the findings of scientific research. For example, in a paper read before the Industrial Hygiene Section of the American Public Health Association Paul E. Sabine, Ph.D. said, "There is a wealth of reliable data from medical sources in support of the statement that sustained exposure to noise is a 'contributing factor in impaired hearing, chronic fatigue that lowers bodily resistance, neurasthenia, increased blood pressure and decreased mental and working efficiency, and that noise should rightfully be classified as an occupational hazard along with gases, fumes, dust, toxic liquids and bacteria.' "

The physiological effect of noise varies a great deal with the individual. It is often cumulative in that exposure to a noise which is harmless for a short period is quiet likely to have bad results where the exposure lasts for a considerable time. It is also true that the psychological effect of noise depends to a large extent on such conditions as high frequency, monotony, suddenness, confusion and so forth, quite independently of its loudness.

Acoustical engineers have developed a noise meter for measuring the noise levels of different machines or noisy areas in terms of decibels. The sensation of loudness follows a logarithmic law with respect to physical intensity, so that sound at the "threshold of feeling", rated at 120 to 130 decibels, where it is loud enough to begin to be painful, has some

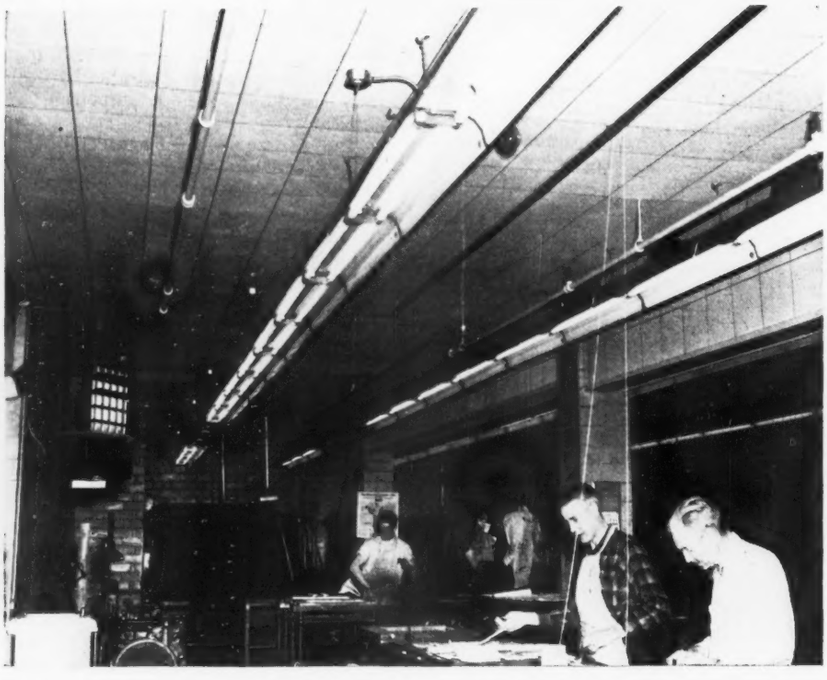


Fig. 2.—Acoustical ceiling in the composing room of the *Enterprise-Times*, Brockton, Mass.

10 trillion times the physical intensity of sound at the "threshold of hearing", rated at zero decibels. What decibels mean in terms of actual familiar sounds, or noises, will become more definite when it is considered that the loudness of whispering rate at 20 to 35 decibels, an average conversation at 55 to 65 decibels, a noisy office 60 to 80 decibels and so on. The noise from some printing presses runs from 90 to 105 decibels. At these levels a very slight reduction by "deadening" results in a very noticeable increase in comfort.

An interesting and important fact has been determined experimentally to the effect that a small reduction in noise as measured in decibels actually appears to the human ear and nervous system generally, as a much greater reduction. It is one of those things involving the human equation which cannot be overlooked when considering sound conditioning, and which is generally recognized by acoustical engineers.

In the two newspaper jobs which have been discussed the acoustical tile is made of a porous, fibrous material with closely spaced perforations. It absorbs the sound wave which impinge upon it to a very large extent, thus greatly reducing the number of reflections, and the building up of noise by excessive reflection. Reverberation, or the prolongation of sounds by reflection from comparatively non-absorbent surfaces such as walls, ceilings and machinery all around the room gives the workers exposed to it the feeling of being in a noisy environment. Acoustical treatment of the reflecting surfaces, or some of them, greatly reduces this annoyance, even if the noise level in decibels is not much reduced. A man working at a noisy machine then hears mostly only the noise made by that one machine and has the feeling that his surroundings are otherwise relatively quiet. This is because the element of confusion, nervously so fatiguing, due to noises coming from many different directions is largely eliminated.

In some instances it is necessary to apply the acoustical tile part way down one or more side walls, in addition to the ceiling, in order to obtain the desired quieting effect. The necessity for this depends on such factors as the height of the ceiling, size of the room, the location of the noise producing machinery in it, the character of the noise, etc. Competent acoustical engineers can tell very easily and quickly how the treatment should be applied to get the best results, and those associated with reliable manufacturers of acoustical materials will be glad to make proper recommendations for the asking.

An important point to take into consideration when deciding upon the desirability of sound conditioning is the effect it will have on the safety program. The nervous wear and tear of too much noise and its distracting effect is quite likely to lead eventually to an accident. In addition to this it is obvious that loud noises from machinery and other operations may easily blanket sounds which might otherwise be warnings of approaching danger.

As the cost of acoustical treatment is rarely high and its benefits are usually great, there is every reason why a progressive management should look into its possible advantages. The tile may almost always be applied without interfering with production schedules and the type which has been considered may be painted repeatedly with ordinary paint by ordinary methods without suffering damage to its acoustical properties. Sound conditioning, when carried out properly, generally pays a handsome dividend on the investment.

It is also worth noting that, as in the case of the Brockton (Mass.) *Enterprise-Times*, the acoustical tile makes a very good material for the repair of ceilings. It also has excellent heat insulating properties and where applied to a ceiling which is next to the roof helps materially in keeping the space below cool in summer and warm in winter. This has frequently been experienced as a pleasant surprise by some concern which has installed sound conditioning.

INVITATION

Production and Mechanical Executive readers of *Printing Equipment Engineer* are invited to send to the editor descriptions of devices or methods which they have devised to help production or to improve printing in their plants. Other executives will be grateful to you for passing along the information. Just write informally in a letter.

Gravure Research, Inc. is Being Organized

Consisting of publication printers and users in the rotogravure field, Gravure Research, Inc., it is understood, will be incorporated under the laws of the State of Delaware as a non-profit organization shortly. The purpose of the organization will be to sponsor cooperatively scientific research in the gravure field. Tentatively, there will be two classes of membership. Active memberships will be confined to firms processing by gravure methods. Associate membership will be open to firms using gravure printed in the publication and direct advertising fields. As soon as organization procedure has been complied with and officers have been elected, *Printing Equipment Engineer* will inform its readers.

Company Expands

Thomas A. Koppel, president of Thomas A. Koppel Co., 228 E. 45th St., New York, N. Y., announced further progress in the company's expansion program. A new Lake Erie Directomat Hydraulic Matrix machine has been installed in the matrix department and a Baum Folder was placed in operation in the bindery. Recently an additional No. 2 Kelly press and a Davidson duplicator had been installed in the letterpress and lettershop department. The company was organized in 1944. It is a member of the New York Employing Printers Association, the Electrotypers and Stereotypers Association of New York and the Mail Advertising Service Association of New York.

Mr. Koppel disclosed that sales volume for the current fiscal year is at five times the rate of the first fiscal year and that the company now has 38 employees.

Technological Progress in the Newspaper Industry

NEWSPAPER production and mechanical executives always have been research-minded. If this statement were not true it is not likely that the American Newspaper Publishers Association would be authorizing its Mechanical Committee to develop a program of scientific research and the employment of a full-time director in collaboration with established research institutions.

The charge from several quarters that there has been little or no improvement in newspaper printing during the last 40 years is fallacious. The statement also is an indictment of the equipment manufacturers and newspaper mechanical executives who have expended much time and effort in improving the process of printing newspapers. Particularly, in the case of the equipment manufacturers millions of dollars' worth of research and developmental work has been written off.

The equipment manufacturers through their developmental laboratories, and newspaper plant executives have speeded up and improved the process in general. But, the improvements have been made without benefit of coordinated program. Under these circumstances, it is all the more to the credit of the equipment manufacturers and the newspaper profession—both management and mechanical executive personnel—that considerable beneficial improvement in newspaper printing has taken place within the last twenty years.

It seems to *Printing Equipment Engineer*, inasmuch as we don't like the inference that little or no improvement has been made in newspaper printing technology during the past 40 years, that a few of the outstanding accomplishments by manufacturers alone could very well be mentioned. Among them are improved slug-casting equipment. Type faces suitable to the stereotype process have been designed and equipment produces slugs which have solidity and clarity of type face to reproduce excellently by the stereotype mat molding and casting process; improved mats and platemaking equipment by means of which it is possible to produce at rapid rate plates having overall tolerance of 0.002 in. (former dimensional errors ranged from 0.006 in. to as much as 0.015 in.); press equipment printing at accelerated speeds; press tension and automatic pasting devices which permit uninterrupted printing speeds with minimum spoilage of expensive newsprint. All of these improvements have been made in response to the publishers' arbitrary demands for maximum mat shrinkage and high press production speeds.

To repeat, there are a number of outstanding detail improvements which have been sponsored "the hard way" by newspaper mechanical and production executives. These men, like their fellows, have been acutely conscious of the need for improved means for producing papers within rigid time limitations. The important consideration is that they have at least tried to do something, and in a number of instances have succeeded in contributing to better newspaper printing.

We mention a number. We know full well the list is not complete. It would be impossible to mention all, We wish only to prove the point. Irving Stone, formerly mechanical superintendent of the Chicago *Daily News*, is responsible for the running of dry newsprint; he is the inventor of the magazine reel for handling rolls of newsprint continuously and for the push-button system of press control. Adolph Weiss of Alco Gravure invented the enclosed ink fountain for rotogravure presses, thereby tripling the speed at which this type of printing can be run. Courtland Strang, mechanical superintendent of the New York *Times*, invented and worked out the vacuum casting back used on Autoplates which is being universally adopted by newspapers. The late George Pancoast, who was general mechanical superintendent of the Hearst Newspapers, developed the Pancoast-type of color press, the late news and red line device and other improvements.

Others who have contributed to better newspaper printing are John Park of the Chicago *Tribune*, who with his staff has contributed to newspaper color printing and at last report was working on a means for quick drying of the first impression side of the web to eliminate first-impression offset. The late Walter Ogden contributed a means for controlling the web tension at the roll which was adopted by one of the leading press manufacturers; his studies regarding press speeds and the behavior of plates and webs have been beneficial. Others have worked on first impression offset, among them Auburn Taylor, Charleston (W. Va.) *Gazette* with water-base ink and Lester Yeager, Indianapolis (Ind.) *Star* with a special glass-beaded blanket. Don't overlook the advanced ideas presented recently by Earl Weiskittel of the Youngstown (O.) *Vindicator* with respect to better printing.

In the stereotype section, Leslie J. Griner, well known in the field, George Fuller of the Cleveland *Press* and Harry Wrasse of the Milwaukee *Journal*, have contributed immeasurably to their craft.

Newspaper technologists have been working for improved printing results against two major interferences—those of increased mat shrinkage and first impression offset. There isn't any doubt but what newspaper printing would have been more completely improved were it not for these two major aggravating elements. The improvements which have been made in equipment and process in the face of these two almost insurmountable obstructions certainly rebound all the more to the credit of those who have made contributions to better printing.

Referring to the recent Rockefeller report to the ANPA, we are sure that one recommendation in the report is basic. This has reference to the avoidance of duplication of effort in work which has been done already; also with respect to some kind of coordination between the equipment manufacturers and the research organization. In view of the fact that equipment manufacturers have already written off perhaps millions of dollars in research work which has been found to be impracticable, it seems to *Printing Equipment Engineer* that coordination by the ANPA with the manufacturers would be one of the first orders of business.

We are not prepared to say that one of the first objectives of the ANPA research program lies in immediate improvement of the physical appearance of the newspaper. It seems there are basic causes for defective printing which will be found in one or more of the operations which precede the actual printing operation. At any rate, the ever-present established maximum printing speeds and the fearful and wonderful mat-shrinkage operation would seem to dictate rather arbitrary developmental procedures.

Pretentious Program

The Southwestern Graphic Arts Conference will be held in Wichita, Kan., on May 8, 9 and 10. The theme will be *Forging Tomorrow's Markets*. Some features of the program are an address by Rev. Leo C. Brown, S. J., Director of the Labor School and Institute of Social Science at St. Louis University. A trouble shooter in the field of industrial relations, he will speak on *Labor Relations*.

J. L. Frazier, editor of *Inland Printer*, will act as moderator of a panel discussion on the *Future Possibilities of Printing—Material—Equipment—Uses*. His panel will consist of two other speakers. The subject of *Materials* and their future possibilities and research will be by a selected speaker. *Coming Equipment* will be by T. E. Dunwody, editor of *American Pressman*, *Future Uses of Printing* will be presented by Mr. Frazier.

There will be two Craftsmen's Clinics. *Type Composition Layout*, with H. Milton Jungbluth, Manager, Western Newspaper Union as moderator. *Type Design* will be discussed by John Lamoreux, Warwick Typographers, St. Louis, Mo., *Composing Room Practice* will be headed by Walter Schultz of Dallas, Tex. and *Trade Composing* by Lester Neuman of the M & L Typesetting Co., Chicago, Ill. Leven Deputy of Dallas, Tex. will act as chair man of this clinic.

The other Craftsmen's Clinic will start with *Printing Plates* with Stuart Braznell of Braznell Inks, St. Louis, Mo., as chairman and W. H. Griffin as moderator. John McMasters of Eastman Kodak Co. will discuss *Photo-Mechanical Development* and W. H. Wood of Harris Seybold Co., will talk on *Offset Plate Preparation*. Gradie Oakes, Second Vice President of the International Association of Printing House Craftsmen, Chicago, will head the discussion on *Photo-engraving*. *Duplicate Press Plates* will be the topic of Gene Meston of the Capitol City Printing Plate Co., Des Moines, Ia.

Offset—*Time to put the process back where it belongs, asserts Technical Director of Lithographic supply house — Maximum impressions procurable from albumen plate — Future developments of the process*

By NORMAN A. MACK*

**Technical Director, Roberts & Porter, Inc. Chicago. Summary of address delivered before Cleveland Craftsmen's Club, March 1947.*

"WHAT have the letterpress and rotogravure printing processes got that the offset lithographic process doesn't have?" Norman Mack, Technical Director of Robers and Porter, Inc., suppliers to the lithographic industry, opened his address before the Cleveland Craftsmen's Club with this question on Thursday, March 20. The speaker then partially answered his own question by stating: "For one thing, offset-lithographic printers can run lousier paper than can be used by the other two processes and in addition 'We have the step and repeat machine' ". Mr. Mack explained that the step and repeat machine had been of great value to the offset-lithographic industry, particularly in multi-color label, stamp and other kinds of multiple pattern work.

As is the case with the other two printing processes, Mr. Mack stated offset-lithographers have gripes against customers. He mentioned the practice of some advertising agencies who send in sepia colored copy and expect the lithographer to turn out a sparkling black job.

Process is Oversold

The speaker asserted the offset-lithographic process is highly over-rated, it is over-publicized, over-emphasized and the process is over-sold. To its detriment it has been sold as a cheap process despite the fact that any kind of work from cheap work up to high grade work done in six colors "under six feet of water" may be executed because of the range and flexibility of the method.

"Everybody will have to take the offset process bravely. This is no time to become scared. Competition is setting in," he observed.

Time to Put Process Back in Place

Because of the false impression which has been created, the speaker thinks it is time to put the process back where it should be. By offset-lithography one can print as sharp and as good and you can do anything that can be done with any other process on special or stunt printing. However, the best efforts of skilled craftsmen are required. They have to know their job in order to produce good work. As an afterthought Mr. Mack stated "No letterpress printer is going out of business as long as he does an honest job for an honest buck—but he will have competition in the future."

Long-Run Publication Plate

He mentioned the publication printing plate which had been developed by *Time* and *Life* under the supervision of Charles F. Geese, Technical Consultant. *Time* and *Life* has spent about $2 million developing the plate from which it is anticipated 2 million impressions may by obtained without the use of a dampener system of any kind. The plate, however, is patented and apparently it will not be utilized by the general offset commercial printer because it is intended strictly for publication work. The standard dampening system as used by offset-lithographers is eliminated with this plate by coating the non-printing areas with a bi-metal. Special equipment is required to do the coating of the non-printing areas.

In response to a question from the audience, Mr. Mack stated the German mercury-controlled inks are "toughies" because the mercury in the ink wants to go back into a ball. In other words, mercury has an affinity for itself and it is extremely difficult to hold in suspension in any compound. In using these inks there is also the poison hazard to be considered.

Accelerated Development of Web-Offset

He predicted that during the next 10 years the greatest development in web-offset printing will occur. Equipment will be developed for printing four colors on two sides of the sheet and the product will be printed and folded into signatures at 13,500 copies per hour.

Maximum Albumen Plate Life

With respect to the durability of the albumen offset printing plate the speaker said "There's no use kidding anybody, the maximum run which may be ob-

ANPA MECHANICAL COMMITTEE APPOINTMENTS

PRESIDENT W. G. CHANDLER of the American Newspaper Publishers Association, has announced appointment of the following members of the ANPA Mechanical Committee:

J. L. Stackhouse, President, Easton (Pa.) *Express*, Chairman.
William Baumrucker, jr., Adm. Assistant to Bus. Mgr., New York (N.Y.) *News*.
John L. Blake, Scripps-Howard Newspapers, New York.
A. H. Burns, Mechanical Superintendent, New York *Herald Tribune*.
T. A. Corcoran, Purchasing Agent, Louisville (Ky.) *Courier Journal* and *Times*.
Ralph R. Cranmer, Business Manager, Williamsport (Pa.) *Grit*.
Edwin H. Evers, Production Manager, St. Louis (Mo.) *Globe-Democrat*.
W. L. Fanning, General Manager, Yonkers (N.Y.) *Herald Statesman*.
B. F. Garrity, Personnel Director, Gannett Newspapers, Rochester, N. Y.
M. A. Hagan, Photo-engraving Superintendent, Philadelphia (Pa.) *Inquirer*.
R. E. Lent, Business Manager, Jersey City (N.J.) *Jersey Journal*.
W. B. Pape, Asst. Publisher, Waterbury (Conn.) *Republican and American*.
John W. Park, Production Manager, Chicago *Tribune*.
Charles H. Ruth, Production Manager, Washington (D.C.) *Star*.
Fred W. Schaub, Treasurer-Business Mgr., Decatur (Ill.) *Herald & Review*.
J. J. Shea, General Mechanical Superintendent, Hearst Newspapers, New York.
Russell S. Stratton, Asst. Gen. Mgr., St. Petersburg (Fla.) *Times*.

★

Sub-Committee on Research

From the Mechanical Committee, a sub-committee on Research has been appointed comprising: William Baumrucker, jr., chairman; Ralph R. Cranmer; R. E. Lent; Charles H. Ruth and J. J. Shea. The sub-committee held a meeting March 19 in New York and out of that meeting came a decision to start at once to find a research director to initiate the research program.

tained from an albumen plate on a sheet-fed press is 50,000." He said, however, that on the web-fed offset press 150,000 impressions could be obtained because of the lack of friction during printing on presses where two sides are printed at once.

He said that there is a distinct trend in web fed offset printing for fan form work. Equipment has been developed not only for a printing operation but for collating and for punch and die work. At the present time nine of these presses are doing this work successfully in the United States. He concluded these observations with "Don't ask me about numbering machines in connection with this kind of work."

The Electronic Plate

One of the new developments mentioned by the speaker was the electronic offset printing plate made from a negative into a deep-etched plate. The electronic plate goes back to the bi-metallic plate. Simply, it is an albumen process zinc plate which is placed in a tank and over the non-printing areas of which are placed by an electrical deposition a nickel plating. One of the limitations of the plate, however, is that a fine halftone dot tends to blind out or is covered up by the nickel during the plating operation. The best application for this type of work is in label printing. Depths in the plate average 0.0015 in. in the standard offset plate at the present time. An even coating can't be deposited from top to bottom and from bearer to bearer side of the plate. On the bi-metal plate, however, the coating is similar to that of an electrotype.

Dry Offset

In response to a request he discussed dry offset plates which are used for printing internal revenue stamps and the backgrounds for bank checks. He says the plates are relatively simple to make but are expensive to operate. They are good for only special types of printing. A dry offset plate is an albumen plate but the printing image is in relief. Before the etching operation the back is coated so as to act as an acid resist when the plate is etched in relief with nitric acid. He warned that the asphaltum with which the back of the plate is coated as an acid resist should be removed before the plate is put on the press. This can be done with alcohol.

Stunt Work by Offset

During the question and answer period those who asked questions seemed to want to veer off into new developments or difficult stunt work which could be produced by offset. Mr. Mack, in response to a question, explained that many whiskey labels are being printed on gummed paper by offset even though the dampening system is used on the printing press.

Another question submitted was with reference to printing by offset on cellophane and plastic products. "The man is crazy who would want to do this but it is being done. This specialty work is not for the average printer." It is being done—at a high price per sheet. A coarse screen must be used and the sheets have to be pulled separately from the end of the press since no spray can be used. The acid must be watched extremely carefully during the printing operations. The inks are built up from special varnishes.

The Damping Problem

Mr. Mack discussed the individual and collective efforts which have been made to eliminate the dampening mechanism in offset-lithography. He said that so far as he knew there are at least 72 existing patents in the world and that approximately $750,000 had been spent in trying to eliminate dampening mechanism but no one has "licked the problem yet." He mentioned that his own firm had spent $80,000 in backing his idea for such a device. His own device, he said, was prohibitive in operating expense. His device consisted of an arrangement with 48 keys across the width of the plate, each one of which had to be adjusted individually. Vapor was applied to the plate through a complicated cam mechanism. The device shuts off the vapor 6 in. before the tail end of the plate had passed the nozzles when the press was to be slowed down. When starting up the press, the vapor had to be turned on 4 in. ahead of the leading edge of the plate. This was done automatically by the cam mechanism. He said any one who would be interested in his method for eliminating the dampening mechanism could find it under his desk in Chicago.

Difference Between Photo-engraving and Offset Screen Work

Someone asked Mr. Mack why the offset-lithographer could not use the same halftone screen system as used by photo-engravers. Mr. Mack stated the photo-engraver uses all 10 shades in the gray scale ranging from 10 to 100 per cent. The reason the offset-lithographer cannot use all of the 10 shades is that the screen in the plate fills in on the press. The pressman has difficulty in trying to keep the tones open on the press. He needs contrast in the plate. A 20 per cent tone area as used by the photo-engraver for copper work won't look exactly the same as a 20 per cent tone area in an offset plate. Normally the offset-lithographer must shoot for decided contrast. Therefore, he drops out for instance, the 10 per cent tone. Instead of shooting for a 90 per cent tone he will drop down to an 80 per cent tone. To get the 90 per cent effect he shoots for a 70 to 80 per cent tone because of the impression in offset printing, there being no hard ring around the halftone dot.

Maintaining Letterpress's Leadership

By RUSSELL J. HOGAN*

**Plant Manager, The Blanchard Press, New York, N. Y. Abstracted from address delivered before American Photo-Engravers Association convention, Philadelphia, October 1946.*

LETTERPRESS printers cannot allow the present peak demand for their product and the healthy financial condition of their business to cause them to lose sight of the fact that both offset and gravure are still highly competitive processes. They, too, are also enjoying prosperity at the present time. While the offset and gravure industries at present are faced with the same problems as the letterpress field—those of shortages, lack of sufficient materials and manpower—it is my belief they will emerge from the post-war period in an advantageous position over letterpress. They have had and still maintain an advantage over the letterpress industry due to the fact that the majority of concerns producing offset and gravure are self contained for the production of their product. This is particularly true of the lithographic industry, While the letterpress industry is split up into many essential units.

Let us consider the numerous organizations involved in the production of the average piece of letterpress printing. Think of the cost of duplication of supervision, overhead and the division of profit. Also the responsibility for the organization awarded the contract to produce the finished job. Next, take the task of scheduling and coordinating the materials originating from many sources which are necessary for the completion of a piece of letterpress printed matter.

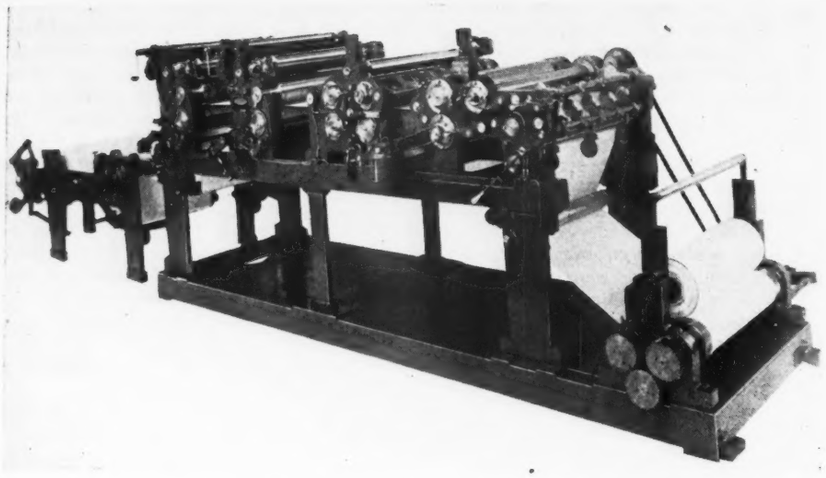
In the years just prior to the war, the letterpress industry has been surpassed in research and new developments by its two principal competitive processes.

Is it not remarkable that letterpress has retained its supremacy in spite of all this? One might ask: Has it been a matter of good fortune or can it be that the majority of buyers of printing are partial to letterpress?

Having produced and supervised the production of photo-engravings, letterpress, offset and gravure printing, I have been in a most fortunate position to make a thorough study of the merits of all three major methods of reproduction. Letterpress printing "thanks to the developments and progress in photo-engraving" has long been known and is still unsurpassed for faithful reproduction of pictorial copy. While this has been very helpful to letterpress, the basic principle of the letterpress process is responsible more than any other factor in keeping it the major method of reproduction. No other process can boast of the flexibility, high standard and consistent uniformity of quality equal to letterpress. This is by no means cause to make light of the competitive processes or reason for disparaging comments of their possibilities. I believe if letterpress's opportunities are fully expanded it has better than an even chance to increase its ratio, over the present volume, of all printing produced.

If in the future, the cost of letterpress printing should far exceed that of offset there is a possibility that the consumer may be forced to forsake the high fidelity and quality of letterpress for the want of economy. This must never happen. It will not happen if suitable action is taken immediately by all branches of the letterpress industry.

EQUIPMENT & SUPPLIES



One of two presses recently completed by the Webendorfer Div. of American Type Founders, Inc., for a specialty printer, this web press prints entirely from rubber plates. It is claimed to produce business forms at a speed of 15,000 to 20,000 cylinder revolutions per hr. The press accommodates a web of paper 22½ in. wide and will print from a cylinder 17 in. in circumference. Cylinders and shafts operate in antifriction bearings except the removable plate cylinders. Automatic lubrication is provided for all main bearings and the feed roll mechanism is controlled for tension and has a variable speed adjustment.

A feature of this ATF-Webendorfer web press is the removable plate cylinders, which may be taken out and placed on a work bench for makeready on another job while another set of cylinders is running on the press.

Shown on the press, from left to right, are a single roll stand, two rubber plate printing units, one punching unit, one numbering unit, one cross perforator unit, one jump perforator unit for lengthwise perforation, and one combination lengthwise slitter and perforator unit and surface rewinder.

Tubular Structure Provides Light Weight in Micrometers

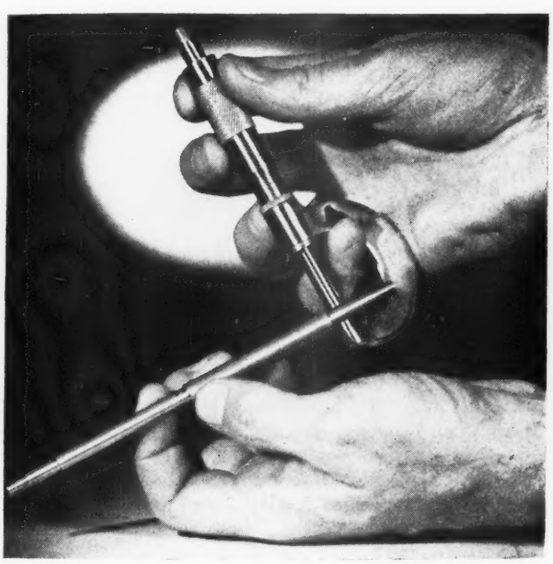
TUBULAR Micrometer Co. has announced Tumico micrometers. In addition to their accuracy, manufacturer states the hollow or tubular construction of the frame instruments greatly reduces operator fatigue since they can be handled with minimum effort. Structural weight has been cut 50 per cent.

Other features of Tumico micrometers claimed by manufacturer are as follows: Wear takeup spindle bushing assembly compensates for wear at the frame through three points on the spindle—at the tip and on the thread. The upper and lower wear nuts on the taper ground threads may be tightened to realign the micrometer spindle. Both spindle and anvil are hardened to Rockwell 64-C to reduce wear. Spindle is lapped to true fit with the barrel to insure trouble-free operation and smooth action. Micrometer graduations and numerals are large and easy to read.

Components of the hollow micrometer frame are made of high grade alloy steel having a stable homogenous grain structure. Distortion or spread is imperceptable. In addition, frame parts are electro-plated with copper, nickel and chrome. The heavy plated finish eliminates rust and tarnish and effectively resists corrosion from perspiration. Hollow frame structure and triple plating tends to eliminate shock distortion if the micrometers are accidently dropped.

Tumico micrometers are furnished in a variety of types for numerous precision measuring requirements. These include the conventional type micrometer ranging in size from 0 in. to 24 in.; the blade type tubular micrometer for measuring narrow depths is furnished in sizes from 0 in. to 4½ in.; roller mill tubular micrometers may be had with a 3 in. or 6 in. throat depth. A complete line of bow type micrometers with interchangeable mandrels is manufactured in sizes from 0 in. to 96 in. Internal bores or openings ranging in size from 6 in. to 106 in. may be measured with Tumico inside tubular micrometers.

If you would like further information, *Printing Equipment Engineer* will gladly forward your request.



View of one of the Tumico Tubular Frame Micrometers in use. Because of the hollow tubular construction in the frame, it is claimed by manufacturer that the weight has been reduced 50 per cent.

Rust Remover

ANOTHER war production development is a liquid rust remover produced by Allied Products Co., and marketed under the name CorOdex. Claims for the new rust remover are that it is effective on any metal surface, that it will remove a thick coat of rust, that it penetrates pin point spots, pits, crevices, cracks or corners. It can be applied with a paint brush or cotton swab.

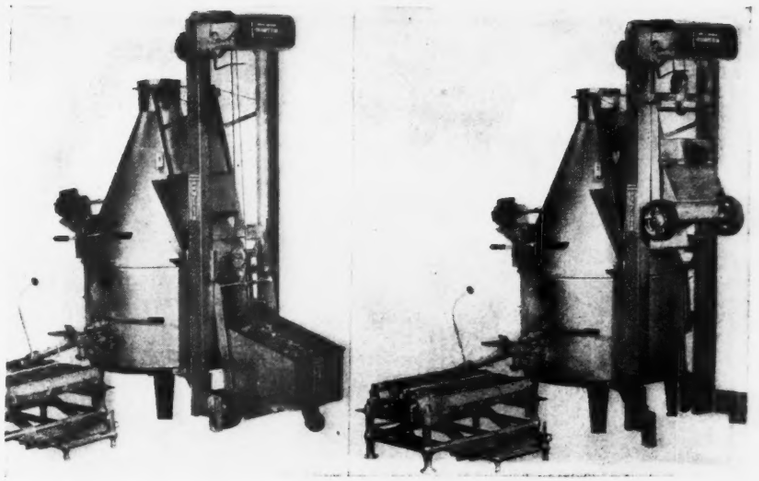
Other claims for CorOdex are that it requires no rubbing, is non-explosive, non-inflammable, and will not injure metal or the hands of the user. Small rust-coated objects may be treated by dipping the articles in a glass, jar or crock of CorOdex.

Another feature, say its makers, is that CorOdex removes rust from any surface without changing the contour or shape of the article treated.

Makers say that the action of CorOdex is rapid and that after treating the corroded surface, either by hand application or by dipping, CorOdex will dissolve light rust in a few minutes, while longer applications will remove a coating of rust up to one quarter inch thick. The article may then be wiped with a clean, dry cloth. Long immersion leaves the surface with a blue-black oxidized finish which materially increases its resistance to further rusting.

CorOdex is available in 12 oz. and quart bottles and gallon containers. Allied Products Co. has prepared a rust control manual of information and instructions. Readers may secure a copy by writing *Printing Equipment Engineer*.

Illustrated is one of the United American type metal remelting furnaces equipped with Dumperin automatic pot loading device. The loaded truck is ready for someone to press a button to start it on its upward journey.
At the right the Dumperin is shown dumping the slugs into the remelting furnace. Press another button and the empty truck returns to original position.



Dumperin

THE United American Metals Corp. has developed a contrivance to load line slugs and type into the remelt furnace by pushing a button. The device named the Dumperin, consists of two parallel tracks occupying 14 in. in depth and 28 in. in width of frontage space.

Press a button and the truck with its 500 lb. load of slugs rolls up the front of the furnace, opens the door in the hood and dumps its load into the pot. Then press another button and the door closes and the truck rolls down for another load. Time required for the operation, states the manufacturer, is less than 2 min. The Dumperin can be adapted to most of the standard remelting furnaces used in the printing plant. Further information may be secured from *Printing Equipment Engineer*.

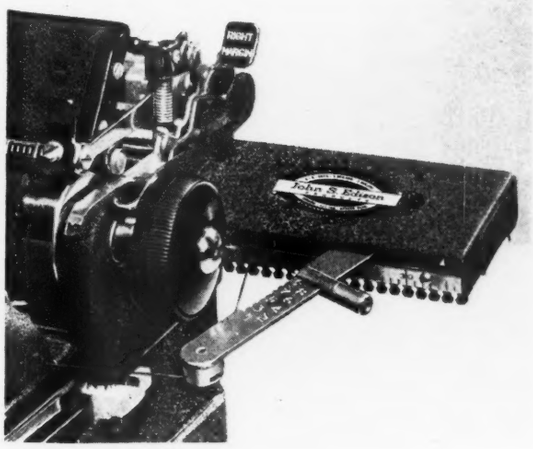
Edison Margin Justifier

TYPEWRITTEN matter with aligned right-hand margins can be executed on your typewriter, by using the Edison Margin Justifier. This Justifier may be installed on all standard typewriters and is now in production. Through use of this device the space between each character in the line of typing can be condensed or expanded unnoticeably to bring the lines out to a straight right-hand margin.

Justifier Sales Co. points out that use of the Edison Margin Justifier will assist in the preparation of booklets, catalogs, price lists, sales and service manuals, house organs, form letters, parts lists, etc. In fact, any material may be reproduced by means of any of the three duplicating processes that use typewritten text matter, stencil, fluid and offset.

Manufacturer states the Edison Justifier may be installed by any typewriter mechanic without machining or making complicated alterations to the typewriter. No special courses on instruction are required to learn the operation. Normal operation of the typewriter is not disturbed.

To prepare copy a transparent rule marked with nine type character spaces is furnished with the Justifier. A preliminary draft of the copy is prepared. The transparent rule is placed on the right-hand margin. Lines must end within the spaces of one to nine. The space five is selected as the right-hand margin. The space each line ends, as shown by the transparent rule, is marked on the rough draft. To type the final copy the knob on the Justifier is set at the space marked on the rough copy as each line is typed. Lines are condensed or expanded to justify the right-hand margin. If you desire further information about this Justifier it will be sent upon request to *Printing Equipment Engineer*.



View of Edison Margin Justifier shows indicator which is set for right-hand margin.

G-E Voltage Stabilizer

WITH the first application in the industry of a General Electric voltage stabilizer, the Charles M. Falk Lithographic plant at San Francisco has eliminated varying voltage conditions and the consequent bad effect on the quality of negatives and prints.

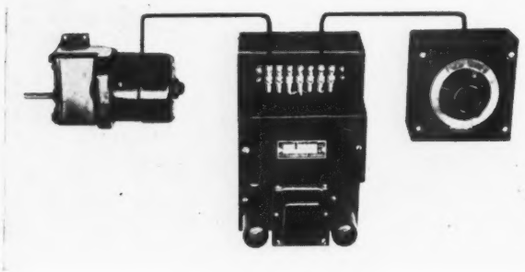
The voltage stabilizer delivers a constant output of 230 v. when connected to an ordinary power line whose voltage varies between 190 and 260 v. Influence of other electrical loads on the voltag output is eliminated.

Installation of the stabilizer grew out of a study by the Falk company of the factors controlling the production of good negatives and prints. It was discovered that negatives did not produce the same true colors for a given exposure, or, for black and white negatives, the same densities for a given exposure. Further studies showed that voltage variation caused by changes of electrical loads on the building circuit produced color vari-

Charles M. Falk of the Charles M. Falk Lithographic Co., San Francisco, stands before the G-E Voltage Stabilizer. He is examining a positive plate. The device eliminates varying voltage conditions and consequent bad effects on quality of negatives and prints.

ations as a result of unequal voltages at the light source.

The G-E voltage stabilizer was installed for control of the lighting circuit used in the photographic process. A 5000 volt-ampere transformer network device, the unit delivers a constant flow of current at the light source. The Falk company, it is claimed, has realized considerable savings in the form of reduced negative spoilage and lower time losses.



View of the Synchro-Link. At the left is the motor control knob. The synchro-link in the center, and load control potentiometer at the right.

Synchro-Link

SYNCHRO-LINK is a remote positioning servo control that will position a distant motor according to the setting of a control transmitter. It can be used with variable speed transmission for controlling the speed of printing presses, to control the position of the lensboard and copyboard in large process cameras and to control the speed of copperplating equipment by photoengravers. The synchro-link controller contacts will handle 15 amp., 110v, a.c. or 10 amp., 220v, a.c. Motors up to $^1/_{10}$ h.p. can be connected directly. Motors from $^1/_{10}$ to 35 h.p. use standard magnetic reversing starter.

The Yardeny Laboratories, Inc., manufacturers of the device, state it is a self-balancing electronic bridge and consists of three basic elements; the master control, with a knob and calibrated dial for manual control or with ¼ in. shaft extension for automatic control; the synchro-link electronic controller; and the load control potentiometer geared to the motor or coupled to the load.

The master control dial can be located any distance from the synchro-link up to several thousand feet. The device is operated by a knob on the master control. It is claimed that turning the knob to a new setting causes an unbalance and closes the circuit to the motor for rotation in proper direction. The Synchro-Link operates on 115v., 60 cy., a.c. Several Synchro-Links can be connected so that a single master control will operate all slave units.

If you desire further information *Printing Equipment Engineer* will be glad to send it to you.

Vulca Starch

A VULCANIZED starch, resistant to the swelling action of heat and chemicals, has been announced by the research department of National Starch Products, Inc. In the printing and paper trades, Vulca starches are adaptable as dusting powders, beater sizings, or as additives to tub sizings.

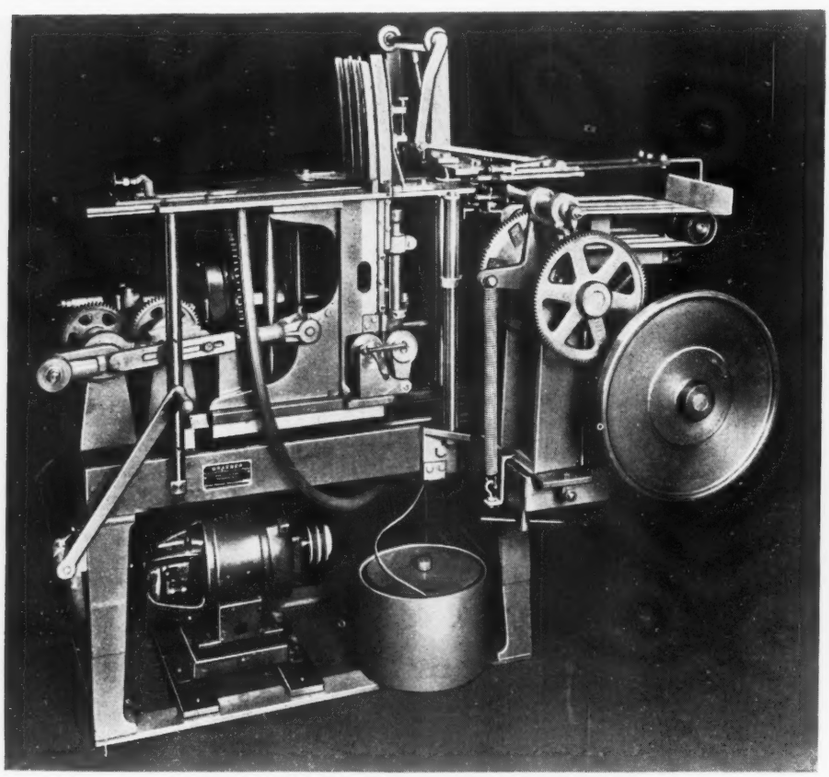
National has applied for patents covering the new line of products, development of which began during the war.

The starch, known as Vulca-100, it is claimed to answer industrial requirements for an inert, non-toxic organic filler or ingredient. It can be cooked in boiling water or a five per cent alkaline solution without increasing its average granule size more than five microns. Approximately neutral in water suspension, the starch settles after cooking, because the granules are not appreciably swollen or ruptured.

The product is non-toxic and is not rapidly hydrolized by acids or enzymes. Steam sterilization makes no essential change in any of the properties of Vulca-100, according to National's development and testing laboratory. Further information may be secured upon request to *Printing Equipment Engineer*.

Buys New Equipment

Purchase of $3 million worth of printing equipment from R. Hoe & Co., Inc., by R. R. Donnelley & Sons Co. of Chicago, was disclosed by Joseph L. Auer, Hoe's president. The order includes six monotone-color gravure presses and three multicolor typographic presses.

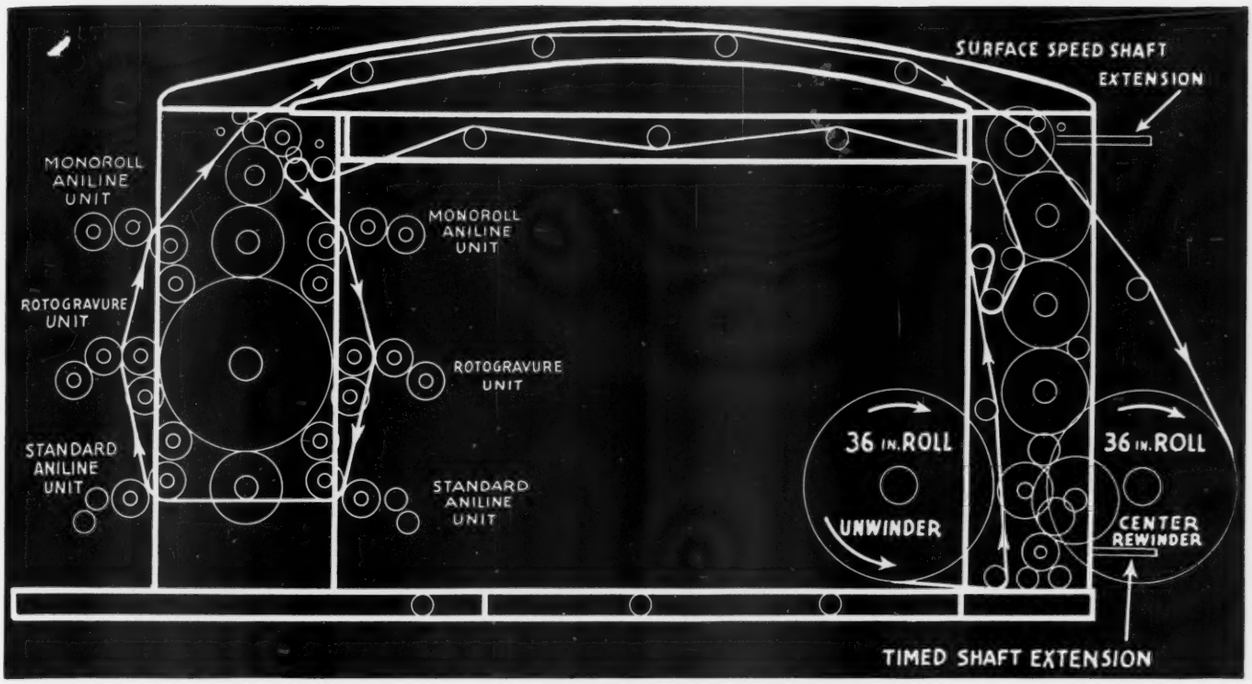


Tag Wiring Machine

Frank Graeber has developed for commercial use, a tag wiring machine, which is now in production by the Graeber Stringing and Wiring Machine Co., Div. of New Era Mfg. Co.

Adapting construction features characteristic of the present Graeber Tag Stringer and Loopers and Tag Stringer and Knotters, all parts on the Graeber Wiring Machine are accessible and visible to operator. Running speed max. is 5400 tags per hr., varying with size of tag and length of run. A counter and signal bell can be set to ring every 50 or 100 tags. Runs by a 1½ h.p. motor.

Five sets of wire gates handle wire from 21 to 26 copper or steel. Each set of gates will handle a single or double wire, according to desired length. The gate range varies from 5 in. single wire to 10 in. double; 6 in. single wire to 12 in. double; 7 in. single wire to 14 in. double; 8 in. single wire to 16 in. double; and 9 in. single wire to 18 in. double; setting when and as desired. Floor space is 6 ft. by 6 ft. Height is 5 ft. 1 in. Bulletin 18 describes this machine in detail. Further information may be secured upon request to *Printing Equipment Engineer*.



Side elevation diagram showing one arrangement of Cottrell-Heinrich Converter Press. These presses may be fitted with aniline, oil ink and/or rotogravure printing units in any combination to suit customer requirements. They are designed for printing upon cellophanes, wax paper, kraft paper, cardboards, glassines, cloths and rubberized goods. Straight or reverse printing. A press for printing six colors on either side of the paper.

In the diagram is shown an 7.85 in. to 47.75 in. circ. by 48 in. wide aniline printing press with center rewinder. Press as shown is arranged to print colors on one side of the web in monoroll aniline, rotogravure and standard aniline in any succession desired before rewinding on a center or surface rewinder. Press dimensions: 21 ft. long, by 9 ft. 2 in. wide by 6 in. high.

Cottrell-Heinrich Converter Press

THE Cottrell-Heinrich web printing presses, intended to be used principally in the converter field, and work from a roll have been announced. These machines, supplied with aniline, oil ink, or rotogravure units in any combination, can be used for printing cellophanes, wax papers, glassines, rubberized goods, cloths, silks, rayons, kraft papers and cardboards. They are also adaptable for wrapping material or for book printing.

The presses will be available in web widths of 36 in. and 48 in. and repeats varying from 7.85 in. to 47.75 in. for aniline printing, 17.59 in. to 35.81 in. for oil ink printing and 7.85 in. to 25.13 in. for rotogravure printing. The increments are 0.3142 in. for aniline and rotogravure printing and 0.6284 in. for oil ink printing. Provisions are made for various optional features and different mechanisms which may be desirable, according to customers' requirements.

Oil ink, aniline or rotogravure printing units can be supplied in any order and combination in the same press. These units are constructed to allow interchangeability of the different kinds of units in any sequence without disturbance to the press proper.

The press can be arranged for four colors with oil ink units, or for six colors with aniline or rotogravure units, or for a combination of these processes.

No additional parts for reversing units for perfecting the web are required, and a press for printing six colors on one side can be converted into a perfecter with different colors on either side.

Two colors of oil ink on one side, and two colors of oil inks on the opposite side of the web, or three colors of aniline or rotogravure on the opposite side of the web, or any combination of all these processes for perfecting, can also be obtained.

While the standard press is provided with a center rewinder, surface rewinder and slitters can also be supplied as optional equipment.

Provisions will be made to accommodate rolls up to 36 in. diam., and hoisting equipment and automatic tensions can be furnished optionally, if such equipment is required.

Circumferential and longitudinal adjustment on the run is supplied as standard with all units.

The drive is fully enclosed with spiral bevel gears running in oil, and the press is equipped with SKF ball bearings throughout, except for the interchangeable plate cylinder shaft journals, which run in bronze bushings, properly lubricated.

An improved throwoff mechanism, releasing printing and ink supply contacts simultaneously, is provided on all printing units as standard equipment.

The speeds obtainable depend, naturally, on the press combination, the material to be printed, and the inks to be used. If these conditions are favorable, the presses will run up to 1000 ft. per min. without undue strain to the various substantially constructed members throughout the machine.

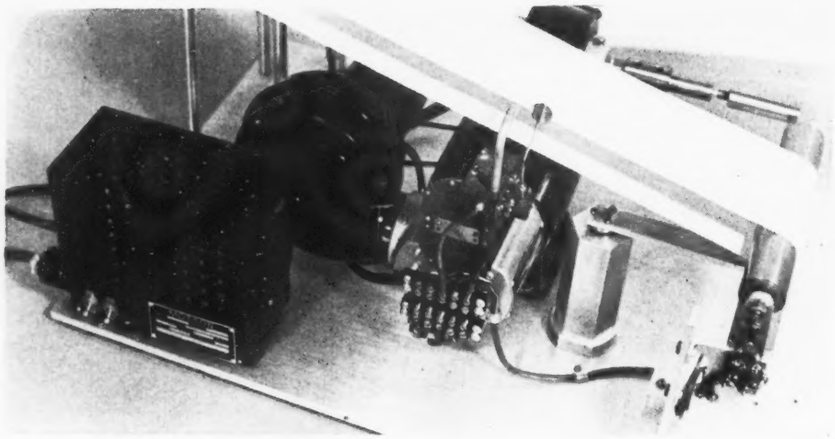
The various combinations of the standard, interchangeable and optional units will compose a complete converter press, according to the requirements of the respective customer.

Two other models of aniline printers, with similar features but of different web widths and repeat ranges, are also available. Further information may be secured through *Printing Equipment Engineer*.

Safety Tread

ANNOUNCEMENT is made of a non-slip safety product, Foothold Safety Tread, by Behr-Manning. It consists of a chemically treated cotton fabric, coated with silicon carbide mineral, and is applicable to points of hazardous footing throughout the printing industry. The product gives safe footing through the grip of its sandpaper-rough surface.

Foothold Safety Tread is supplied in roll or cleat form for application to hazardous areas where there is danger of falling. It can be applied to wood, tile, concrete or metal floors without floor tear-up and can be used immediately after laying. It is available in four colors, black, red, green and silver to high-light danger areas. Foothold Safety Tread is claimed to be waterproof, non-inflamable and resistant to water, grease, oil, alkalies and mild acids. A folder entitled *Safe Footing Pays Double*, containing sample swatches of the new Foothold colors is available upon request to *Printing Equipment Engineer*.



View of Model 61A Motron Servo for maintaining constant web tension or color registration on the printing press. A continuous web of paper is guided laterally by a motor operated pivoting roller. The induction motor has an electronic governor with a speed control arm that is positioned by rubbing on the edge of the moving web. The force the web must exert on the speed control arm is a small fraction of an oz., and 0.001 in. motion of the speed control arm will cause definite motor response. The direction of motor rotation is such that it moves the pivoted roller (through the lead screw and threaded sleeve at the upper right) so that the web is maintained at the desired lateral position within several 0.001 in.

In actual operation, notches may be cut in the web so that the speed control arm is agitated. A continuous line may then be placed on the web and maintained running below a stationary pointer for long periods of time with no observable deflection of the line.

The small electronic amplifier supplies about three percent of the power of the motor, and has replaceable plug-in electronic components for instant servicing.

Motron Electronic Servo

THE Motron Electronic Servomechanism has been developed by the W. C. Robinette Co. While it has other applications its uses for the Graphic Arts industries are as follows: automatic weighing; antenna positioning; tensioning, guiding and winding paper, cloth, thread, wire, etc. It may be applied to the automatic control or regulation of practical problems to eliminate the need of human supervision. Miniature vacuum tubes control the speed and direction of a standard $^1/_{15}$ h.p. induction motor that can be used to control other larger power sources. Manufacturer claims the input-dial controls either the velocity or position of the motor to accurate limits. The velocity in either direction may be limited from zero to maximum independent of input-dial setting to prevent hunting instability. The motor may act as a torque amplifier or remote positioning agent. The 61A Servo is designed for short time constant systems. Further information may be secured upon request to *Printing Equipment Engineer.*

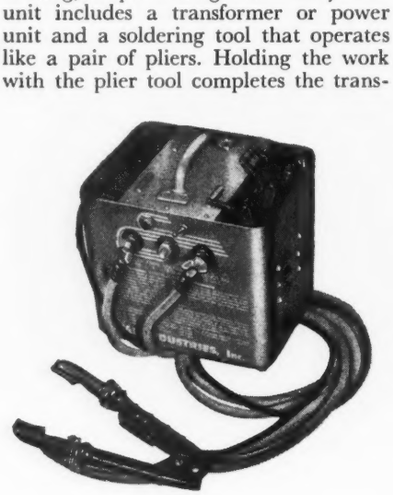
Trademark Symbol Matrix

ON and after July 5, 1947, a new trademark law, known as the Lanham Act, permits the use of a typographic symbol as an alternative to the familiar words *Trade Mark Reg. U. S. Pat. Off.* The specified symbol is to be an R within a circle, similar to the C within a circle used to designate a copyrighted item. To meet this change, which will affect advertising, the Linotype Co. has made available on matrices either a roman or a gothic R in a circle, in several point sizes. Character No. 11, a roman R in a circle, is available in the 6, 8, 10, and 12-point sizes (△344). Character No. 16, a gothic R in a circle, is available in the 6, 8 and 10-point sizes (△344).

Electric Soldering Tool

THE Thermo-Grip Soldering tool, manufactured by Ideal Industries, Inc. operates on the resistance heating principle. The plier is intended for work that may be held in jaws and heated, as in removing or applying older lugs, sweating and unsweating copper pipe and fittings, soldering wire joints.

The unit has thumb switch for close heat control. Manufacturer claims it is light-weight, portable and can be used for long periods of time without overheating, no preheating is necessary. The unit includes a transformer or power unit and a soldering tool that operates like a pair of pliers. Holding the work with the plier tool completes the transformer secondary circuit and causes the work to heat. Heat is produced between the electrodes of the soldering tool, which manufacturer states prevents melting nearby joints.



Handles of the soldering tool are made of light-weight plastic. Radiating fins isolate the jaws from the handles. The plier can be locked in any position for special applications by tightening screw at hinge. Unit is rated at 1000 watts. Case measures $10^3/_4$ in. by 6 in. by $10^3/_8$ in.

Mold Pentrate Service

Everett G. Shaffstall of the Everett G. Shaffstall Co., 538 So. Main St., Marion, O., has announced mold Pentrate service for users of Intertypes and Linotypes. Mr. Shaffstall expects to cover several of the Middle-Western states initially with the service. Pentrating is a chemical process for treating the surfaces of line-casting machine molds to make them impervious to oxide coating over a several-month period according to usage. The process not only is the means for cleaning molds but it also restores the original polished finish and makes for easy ejection of the slug from the mold. The service is supplied on a contract basis and can be done in the owner's plant.

Drying Oil Odors Eliminated

Pungent, tarry odors which have limited the use of petroleum drying oils by the printing ink industry are reported to be eliminated by a new chemical process developed by I. M. Bernstein, director, and Sam Nelson, research fellow, at the National Printing Ink Research Institute at Lehigh University.

The deodorization process is expected to bring relief to the printing ink plants crippled by the shortage of linseed, principal drying oil for printing ink, and to open a new supply source to the industry.

In announcing application for a patent Bernstein said that several of the major petroleum companies are interested in the process and efforts are being made to start manufacture at an early date.

"These petroleum drying oils are unsaturated by-products resulting from the cracking of crude petroleum for the manufacture of gasoline," said Bernstein. "They have excellent drying properties but their extensive use in printing inks has been limited by their objectionable pungent, tarry odor. The process developed by the National Printing Ink Research Institute staff at Lehigh removes this odor and renders the resulting oil as bland as linseed."

The Institute is temporarily concentrating all efforts and resources on the discovery or development of new drying oils. "In the opinion of the governing body of the Institute," said its director, "the linseed oil situation is the most serious problem besetting the printing ink industry at the present time, and the shortage is expected to continue for some time."

Ideas *in profusion presented by speakers at Northwest Mechanical Conference — Function of coated photo-engraving camera lens explained — Matrix channel determination code, type metals and printing rollers*

By HORACE ANNIS

THE Northwest Newspaper Mechanical Conference on February 15, 16 and 17, at Hotel Nicollet, Minneapolis, was attended by 446 executives from 14 states and the Dominion of Canada. Wisconsin sent a delegation of 58, 47 came from Illinois and Iowa and the Dakotas had good delegations. The opening day, Saturday, February 15, was devoted to registrations and a get-together in the evening.

American Type Founders through Harry Detlef, Minneapolis manager, were hosts to approximately 400 at a breakfast inthe hotel coffee shop the morning of Sunday, February 16. Following this, formal sessions got under way with a general assembly in the main ball room. President William C. Brown, Mechanical Superintendent, Minneapolis *Star* and *Tribune*, presided. Invocation was by Joseph Hick, St. Cloud *Times*.

Photo-engraving Clinic

THE Photo-engraving clinic had as co-chairmen, Ebbie Jennison, Engraving Superintendent, Minneapolis *Star* and *Tribune*, and George Marsh who holds the same position at the St. Paul *Dispatch-Pioneer Press*. The line-casting clinic was under the co-chairmanship of G. W. Wraggett, Head Machinist, *Star* and *Tribune*, and Joseph J. Cory, Head Machinist, St. Paul *Dispatch-Pioneer Press*. The line-casting clinic attracted a record attendance of approximately 170, while 40 attended the engravers' clinic.

Theory of Increased Light Transmission

Mr. Jennison presided at the photo-engravers' clinic and introduced the speaker, R. P. Mattern, president of May Research, Inc., Minneapolis. Mr. Mattern prefaced his discussion with a brief outline of the historical background of lens coating. In order to understand how a film over the surface of glass will reduce reflection and increase transmission of light, Mr. Mattern explained, it is necessary to consider the mechanics and mathematics of light reflection, refraction and transmission.

He explained this theory thus: Let N equal, the velocity of light in air over the velocity of light in glass. N then becomes the index of refraction. N, in the case of crown glass, is 1.5. Reflection, the same on round or flat surface, can be expressed mathematically as the quantity (N–1 over N plus 1) squared. Now substituting the known value of N for crown glass, that is, 1.5, we get the quantity (1.5–1 over 1.5 plus 1) squared, which equals (.5 over 2.5) squared, which equals .25 over 6.25 which is .042, the reflection on crown glass. Roughly 8 per cent of the light striking crown glass is reflected, while in flint glass which has a refraction index of 1.65, there is a reflection of approximately 6 per cent. These figures are for only one surface. In the case of a camera lens, where there are multiple surfaces, the loss of transmission through reflection of light becomes enormous. By removing this reflection, Mr. Mattern said, it would be possible to get nearly perfect transmission of light.

What Coating Means to Camera Lens

What coating means to a camera lens, Mr. Mattern explained by saying that flint glass and crown glass are used in a camera lens and that by coating this glass the reflection loss in crown glass can be reduced from 4% to 1½% and the flint glass loss can be cut from 6% to .7%. In a camera lens system made up of the two kinds of glass, the total reflection loss on uncoated glass is about 5%, he said.

In the study of wave motion in light one must think of light waves as you would of waves in water into which you have thrown a rock; the waves extend below the surface level as well as above it, the speaker said; another wave started in phase with the first would amplify the wave motion, whereas a wave started out of phase would reduce the wave. This is known as the law of interference. In the case of light, where the wave meets in the same plane, another wave traveling in the opposite direction and of the same length, wave motion is stopped and light reflection is also stopped.

This phenomenon can be accomplished, Mr. Mattern said, by coating a lens to a thickness of one fourth wave length, if the coating has an index of refraction equal to the square root of N for the glass upon which the coating is fixed. The coating to air wave and the glass to air wave will then meet out of phase at the coating surface and oppose each other.

Best Substance for Coating Lenses

Magnesium fluoride has proved to be the best substance for film coating yet

Approximately 446 attended the annual banquet of the Fourth Annual Northwest Mechanical Conference at Hotel Nicollet, Minneapolis on February 16. Officers who contributed to making of the Mechanical Conference are, left to right, Vernon Eck, Dunwoody Institute, Secretary-Treasurer; Charles Bertram, First Vice President; Charles McGuire, Second Vice President; William C. Brown, President, and Al Rosene, Director.

Three of the Exhibits at Recent Northwest Mechanical Conference—At right: This exhibit got a lot of attention and provided visual background of information for mechanical executives and visitors who later heard Vice President Don Crews of Sam'l Bingham's Son Mfg. Co. speak on rollers. Among the fine exhibits were the two shown at right above. These were sponsored by American Type Founders and The Morrison Company. A. C. Arnesen of ATF spoke of equipment and plant layout at the conference. Latest models of Morrison saw and trimming equipment were shown and demonstrated.

known, the speaker said, adding that it provides a coating harder than the glass itself, is not soluble in water and will stand rugged treatment, making it possible to use ordinary cleaning methods without fear of harming a costly lens.

Coating Process

The coating is applied by means of a bell jar vacuum device. The lens glass to be coated is placed on vertical plates inside the jar with the surfaces to be coated facing inward. In the center of the jar is a tungsten filament which holds the magnesium fluoride. All air is exhausted from the jar, the magnesium fluoride is electrically heated to the vaporization point, causing the fluoride to pass to the lens surface and condense there. In reality, the speaker said, the fluoride travels at terrific speed and actually imbeds itself in the lens surface.

The process is stopped when the coating on the lens is one-fourth wave length thick. This, at the center of the spectrum, is five millionths of an inch. The thickness at the blue end of the spectrum would be four millionths for a fourth wave length, and at the red end it would be 6 millionths. The thickness of the coating is determined visually. For instance, when the coating at the center of the spectrum takes on a certain purplish tinge, the coating is the required fourth wave length. This method of inspection, Mr. Mattern said, was used on military lenses during the war and was found to be extremely accurate.

In general discussion after the conclusion of Mr. Mattern's talk it was explained that while the bell jar method employed by his company does not permit the coating of large surfaces, other methods, using a spray, are employed to coat large surfaces such as automobile windshields; window glass can be leached with hydrofluoric acid; focal length of lens is not altered by coating; aluminum mirrors can be protected by bell jar oxidation at low pressure; by Mr. Mattern's company's process a lens can be coated quickly if it is necessary—within a day—but the usual time required is about a week.

Participating in the discussion and adding considerably to it was E. G. Carlson of the Harold Pitman Co., Chicago, who stressed the need for more research in optical equipment.

Line-casting Clinic

THE Line-casting machinists' clinic was presided over by Mr. Cory. First speaker was William Easton of Mohr Lino Saw Co., who exhibited and discussed a set of slides prepared for the Apprentice Study club of the Chicago line-casting machinists' apprentices. These slides depict various trouble spots of line-casting machines and the remedies for such troubles, for instance, the setting of the delivery slide by the "lazy man's method (two 2 pt. leads between the adjusting screw and the carriage), Mr. Easton pointing out that the adjustment should be made so that the last matrix in the line will come inside the first elevator jaw pawls; setting the back knife by the use of red lead and lamp black, and the more accurate and less messy use of a feeler gauge; oiling clutch leathers with 6 to 8 drops of neatsfoot oil to make them more pliable and increase the pull.

In discussion of metal pot troubles, it was brought out that the metal should be kept about ½ in. below the top flange of the crucible since a higher level will produce a poorer face, despite the fact that the slug is more solid, and a lower level will sharpen the face but weaken the slug.

Second speaker was Tom Dorris of the Teletypesetter Co., who discussed care of the Teletypesetter and operator training. Harry Wilson, Mergenthaler Linotype Co., also spoke briefly regarding the supply situation on parts and machines, saying that new machines will become available in from six to thirty months.

Everett Shaffstall, of the Mold Pentrate Co., described his company's service, saying that while the Pentrate acts as an insulation to keep metal from being deposited on the mold it penetrates into the mold only 0.0035 in. to 0.0045 in. in a treatment lasting from one to three hours. The cost of treatment, he said, varies from $3 per mold per year in plants having 100 molds to $12 per mold per year in 10-mold plants.

Composing Clinic

THE composing room clinic was held at 2:30 p.m. Sunday, February 16, in the Junior Ball Room with Robert E. Lee, Composing Room Superintendent, St. Paul *Dispatch-Pioneer Press* and William J. Davies, Day Foreman, Minneapolis *Star* and *Tribune*, as co-chairmen. Mr. Lee, presiding, introduced A. C. Arnesen, American Type Founders, who discussed *Newspaper Composing Room, Equipment and Layout.*

During the question and answer period, Mr. Arnesen answered a number of questions, some of which are as follows:

Q.—How much space should there be between type frames in a job shop? A.—The distance can vary, but it should not be less than four feet.

Q.—In a composing room doing publication work, ad composition and page makeup, what should be the proportion of saws to men? A.—In a plant equipped with a Ludlow, Elrod and Monotype equipment, there should be one saw for every two men. Plenty of saws lower production costs.

Q.—In a shop that has an Elrod, should all strip metal be saved for reuse? A.—The longer pieces should be saved,

but anything 25 picas or less in length should be killed.

Q.—In a shop that has Monotype equipment, should all type be killed? A.—I would distribute all faces from 48-point up and some shops even distribute down to 36 pt. It is cheaper in the long run to kill all faces smaller than 36 pt.

Roddy's Suggestions for Improving Newspapers

W. C. Roddy, sales manager, Metals Refining Co., Div. of The Glidden Co., Hammond, Ind., next spoke on *Current Demands and Developments in Printing Reproductions*. Following is a summary of Mr. Roddy's address:

It is a recognized fact in the publishing and advertising circles that newspapers need better printing and physical appearance in their efforts to secure a larger share of the advertising dollar.

W. C. Roddy, Sales Manager, Metals Refining Co., discusses *Demands and Developments in Printing Reproductions*.

Approximately 85% of a newspaper's income is from advertising and for several years the average newspaper's share of each advertising dollar spent in this country has been declining as more competition appeared on the horizon. The latest is four-color television. Television will get a slice of some advertising programs this year and much more during 1948, and so on through the years.

We have a new type of newspaper coming. Perhaps you already have seen or heard about it. It is a 4 p. radio newspaper from Chicago. The transmitting device delivers the paper by FM radio. The columns are 12 pica width and the pages are 7 in. long with 4 columns.

Three things can be done in a newspaper plant, without the replacement of equipment, that will produce an improved paper and I shall attempt to cover these three points presently. I call your attention specifically to your present equipment, because a great deal of that new equipment you have on order is not going to be delivered as fast as you have anticipated. The three important factors in fabrication operations that will improve the physical appearance of a paper when printed on your present equipment are paper, ink and type.

Paper is being improved with the use of soya protein, white pigments and other chemicals through research. It isn't going to be too long before newsprint of far better quality will be available. It is available in some degree today to the small and medium size dailies.

Ink is being improved through research with improved oils, chemicals and better pigments. Better ink is now available to all dailies.

Type and type faces are basic factors in newspaper appearance and it is an obvious fact that you can print only what comes from the composing room. The gap between the quality of the printing surface on slugs or plates and new foundry type has been a research project upon which we have worked for the past eight years.

The present orthodox Intertype and

Conference Dates

(with organization names and principal officers.)

ANPA Mechanical Conference—Palmer House, Chicago, Ill., June 9, 10, 11, 1947. Worth Coutney, Chairman; Walter E. Wines, Manager, ANPA Mechanical Dept., 370 Lexington Ave., New York 17, N. Y.

Great Lakes Newspaper Mechanical Conference—Pantlind Hotel, Grand Rapids, Mich., Oct. 26, 27, 28. President Deo A. Padgett, Composing Room Supt., Cleveland *Plain Dealer;* Secretary Al. P. Oberg, Composing Room Supt., Flint (Mich.) *Journal.*

International Association of Printing House Craftsmen — Grand Union Hotel, Saratoga Springs, N. Y., Aug. 31, Sept. 1, 2, 3. Wm. H. Griffin, President, Griffin Bros., 447 Sansome St., San Francisco, Calif.; Secretary, Pearl E. Oldt, 702 Griswold St., S. E., Grand Rapids 2, Mich.

International Trade Composition Association — Book - Cadillac Hotel, Detroit, Mich., Aug. 28, 29, 30. Frank M. Sherman, Executive-Secretary, 1015 Chestnut St., Philadelphia 7, Pa.

Iowa Daily Newspaper Mechanical Conference—Hotel Burlington, Burlington, Ia., May 24, 25 and 26. President A. H. Schmeichel, Composing Room Supt., Muscatine (Ia.) *Journal;* Secretary Paul Kamler, Composing Room Supt., Clinton (Ia.) *Herald.*

Lithographers National Association—Saranac Inn, Saranac, N. Y., June 3, 4 and 5. Further information may be secured from the Association at 420 Lexington Ave., New York 17, N. Y.

National Association of Photo Lithographers — Book - Cadillac Hotel, Detroit, Mich., Oct. 22, 23, 24 and 25. Walter Soderstrom, Executive Secretary, 1776 Broadway, New York 19, N. Y.

National Graphic Arts Education Association — Hotel Morrison, Chicago, Ill., June 16, 17 and 18. Byron G. Culver, president; Fred J. Hartman, educational director, 719 Fifteenth St., N. W., Washington 5, D. C.

New England Daily Newspaper Composing Room Executives Association—Holyoke, Mass., May 3 and 4. President Joseph J. Mahoney, Holyoke (Mass.) *Transcript;* Secretary Edwin A. Hutt, Keene (N.H.) *Sentinel.*

New England Mechanical Conference—Hotel Statler, Boston, Mass., Nov. 8 and 9, 1947. President, Wm. F. Madden, Composing Room Supt., Worcester, (Mass.) *Telegram-Gazette.* Walter C. Crighton, Secretary-Treasurer, New London (Conn.) *Day.*

Northwest Mechanical Conference — President Charles N. Bertram, Pressroom Supt., St. Paul (Minn.) *Dispatch and Pioneer Press.* Vernon Eck, Secretary, 3725 48th Ave. S., Minneapolis 6, Minn.

Pacific Newspaper Mechanical Conference— Hotel Biltmore, Los Angeles, Calif. May 10 and 11, 1947. President Edw. Sparks, Pressroom Supt., Los Angeles *Examiner;* Secretary, Fred J. Moyer, *Daily News,* Los Angeles, Calif.

PNPA 1947 Mechanical Conference—William N. Hardy, Manager, PNPA, 209-213 Telegraph Bldg., Harrisburg, Penna., Nicholas M. Fellman, Chester (Pa.) *Times,* chairman, PNPA Mechanical Committee.

Printing Industry of America — French Lick Springs Hotel, French Lick, Ind. Sept. 22, 23, 24 and 25. James R. Brackett, General Manager, 719 Fifteenth St., N. W., Washington, D. C.

Southeastern Mailers Association —Ashville, N. C. June 9 and 10, 1947. President Bruce Owens, Greensville (S.C.) *News;* Secretary-Treasurer Maxie H. Thompson, Spartanburg (S.C.) *Herald-Journal.* Open to mailers and those interested in newspaper mechanical production departments.

Southern New England and Boston Trade Typesetting Association—Copley-Plaza Hotel, Boston, Mass., May 10.

Southwestern Graphic Arts Conference—Hotel Lassen, Wichita, Kan. May 8, 9 and 10. Reservations made through Printing Industry of Wichita, 149 N. Topeka Ave., Wichita 2, Kan.

SNPA (Eastern Div.) Mechanical Conference—Walter C. Johnson, Manager SNPA, P. O. Box 1569, Chattanooga 1, Tenn. Chairman Executive Committee, I. J. Gardner, jr., Composing Room Supt., Chattanooga (Tenn.) *Times.*

SNPA (Western Division) Mechanical Conference — February 18, 1948. Location to be selected later. Chairman, W. F. Thompson, Austin (Tex.) *American-Statesman.* Secretary, C. W. Tabb, 723 Texas Bank Bldg., Dallas, Tex.

LINE-CASTING MACHINE MATRIX CHANNEL DETERMINATION CODE

AT THE recent Northwest Mechanical Conference, William Easton of the Mohr Lino-Saw Co., explained his code for determining into what channel entrance and magazine channel a line-casting machine matrix will fall. He explained it as follows:

On the seven rails of the distributor bar there is a possibility of 127 combinations, including the first combination on the rail and the first lower case "e" channel, normally not used. To find the channel into which the matrix will fall, let the top rail equal one; next to the top, two; third from the top, four; fourth from the top, eight, etc., with the seventh equaling 64. Add up the combination on the matrix, subtract two for the ones not used and you have the matrix channel key. For instance, a lowercase "l" matrix has combination teeth one, three and four; one has a code of one; three has a code of four and four has a code of eight. Added, they make 13, subtracting two leaves 11, which is the channel number.

Linotype metal formulation was developed when only body matter was set on a typesetting machine. At that time the flow of metal contacted a limited area in the opening of the mold. Today, in most plants, the area of contact is much greater and should have increased fluidity and faster freezing to realize the maximum production and casting ability from modern casting equipment.

"Through our research program," the speaker stated, "we found that by increasing the tin content over the orthodox formula up to a certain point, together with proper scientific treatment, we improved the face of both slugs and plates. It improved fluidity and increased the toughness of both the slugs and plates.

"This tin content gives reproduction and casting improvements to the metal. The old service metal formulae have a formation of lead and antimony crystals that make a coarse grain structure in the molten stage and this increased tin tightens the texture and crystal formations, which enables firmer details to be reproduced.

"Through scientific treatment, the antimony is controlled in relation to the percentage of tin and lead, permitting fluidity in a single, fast-crawling unit that forces complete ventage.

"Such well-balanced formulae produce harder and tougher slugs on the Brinnell count. The metal flows freer and is less subject to trapped air, especially on head letter and display machines or casting boxes.

"Color is a dynamic selling force and you men are going to see more of it in the future newspaper. Color in newspapers will require better-balanced metal formulae. Only when the correct 'flowability' and 'set-back' cooling rate are present in relationship to the modern casting equipment and mats will maximum reproduction and casting efficiency be achieved," he concluded.

It is not going to be very long, boys, when type imperfections are going to stick out in the paper like a sore thumb. Better paper, better ink and color demand will give you an awful jolt. Therefore, give your paper, ink and metal attention and treatment necessary to achieve finer printing.

During the question and answer period, Mr. Roddy answered a number of questions, some of which are as follows:

Q.—In order to improve metal, should a plant scrap all old metal and put in all new? A.—One large newspaper did that at a cost of $23,000 and found it too costly. Now, instead of the abrupt changeover, we gradually blend new metal with the old until it is brought up to a good standard and it is no longer a problem to maintain good uniformity.

Q.—How would it work to blend Linotype and Monotype metal? We have both low velocity and high velocity equipment. A.—Your problem (the question came from a commercial publishing house man) is different than that of a newspaper where the janitor cleans the metal and does little except clean off the dross. You can blend the two metals successfully, providing they are good metals to start with.

Q.—What is the formula of your metal? A.—There is no secret about that. You tell us the conditions in your plant—paper, ink, stereotyping equipment, etc., and we will give you a formula to fit your needs.

Mailing Clinic

THE mailing room clinic was held at 4:30 p.m. Sunday with Joseph M. Mayen, Mailing Superintendent, St. Paul *Dispatch-Pioneer Press* and Vernon Hol, Mailing Superintendent, Minneapolis *Star* and *Tribune* as co-chairmen. Mr. Hol presided and introduced the speaker, Joseph Menard, Mailing Superintendent, Des Moines *Register* and *Tribune*, who discussed *Mailing Room Layout*.

Before starting to plan a mailing room layout, Mr. Menard said, one must know the exact dimensions of the room to be used; point at which the papers enter; whether you are dealing with daily only or Sunday and daily and what editions will be the largest.

Regardless of what equipment is available, power or hand, it is important to the efficiency of the mailing room that every unnecessary step be avoided, the speaker said, adding that this is done by arranging the work so the same ground is never covered twice.

Much time and effort can be saved by routing the truck loadings so that the

(*Continued on Page 58*)

Ottawa Craftsmen Host to Third District

The Ottawa Craftsmen's Club will be host to the Third District, which includes Montreal, Ottawa, Buffalo, Rochester and Toronto, on Friday and Saturday, May 30 and 31.

The Saturday morning session will be opened by His Worship Mayor Stanley Lewis. This will be followed by a report from the presidents of the District Clubs. The afternoon session will be a round-table clinic on general problems. Dinner in the evening will be followed by entertainment and dancing.

The Printing Machinery Co. of Cincinnati, O. at its stockholders' meeting recently elected Lee Augustine to the board of directors to fill a vacancy. He has been vice president of the company since 1939 and continues in that capacity.

PHOTO-ENGRAVERS MUST UNDERSTAND LENS COATING THEORY

R. F. MATTERN, President of May Research, Inc., Minneapolis, discussed the theory and practical application of camera lens coating at the Northwest Mechanical Conference, held recently in Minneapolis.

Photo-engravers must understand the theory of coated lenses, Mr. Mattern said, because the time is near when all camera lenses will be coated as will also be the case with optical lenses of all kinds. He characterized the lens coating development as the most important for generations in the optical industry, because it has brought light reflection near the vanishing point.

Major importance of the coated lens, the speaker said, is that it will transmit 88 per cent of the light reaching it, whereas the uncoated lens will transmit only 57 per cent, thus giving better image definition; it cuts exposure time by 30 per cent and eliminates ghost images. He listed other benefits such as elimination of color interference, making possible much better color photography, and the almost scratch-proof lens surface. The results in color work are striking, he said, making it possible to get a true red, for instance, instead of the weak red obtained with uncoated lenses. He cautioned that in color film projection the projector lens ought also to be coated in order to retain all of the rich color made possible by the coated camera lens.

Management Statesmanship

provides opportunity for employee to apprise management of unsatisfactory plant conditions — Remedial measures can be taken following ballot

By ROBERT R. GREER*

**Business Engineer, Los Angeles, Calif.*

IN THESE days of management-labor stress, many executives go far afield to search for the panacea to their problems. If they were calmly observant, they might search their own doorstep and readily discover the formulae. The following simple formula is a direct method, and has been employed in many instances to re-establish harmony. It is based upon a confidential ballot where each employee can, without fear or favor, voice his disfavor against each condition that causes dissatisfaction. These details can cover relations with other employees, supervisory, and management, as well as any phase of mechanical, production, safety, or other physical problems.

Each employee can also register any suggestions he feels will help him, his fellow-man, or his employer. If the management so decrees, they can pay the contributors of the good ideas a reward of a day's pay, or a week's pay, for the ideas that have that kind of value.

This ballot method gives the entire personnel a free voice in molding the morale structure of which they are a part. This method of improving plant conditions is the identical democratic way in which the American ballot is used to correct our national conditions... and is the effective safety-valve to your "humanics" structure. Here is the procedure:

1. An unbiased outside business counsellor is selected whose integrity, keen analyses, and impartiality must be above reproach. He must be trusted by all in his fair dealing.

2. Then, with the approval of management, a properly designed ballot (or questionnaire) is given each employee along with a letter from management authorizing them to open their heart freely for the good of all. There will be no fear of reprisals as they are told that neither management nor anyone else will ever know what they have written (excepting the counsellor). The employee is granted the right to explain and express his feelings against each condition that disturbs him. On the other hand, he can state in detail each suggestion that he feels will help him, his fellow-man, or the employer. Confidence will not be violated.

3. These confidential ballots do not have to be signed. All identification can be removed. All that is asked are the facts so they can be corrected—plus sincerity in filling out details. The letter is to be mailed to the office of business consultant, or to his private post office box, where he alone can receive the mail.

4. Each ballot is then personally analized for its positive and negative values by the business consultant. These ballots will never come near the scene of the plant at any time.

5. A score card, with many headings, is set up. Each type of complaint is catalogued under its own heading. The final score of each complaint, after the vote tallies have been counted, gives us the index of intensity of each of these morale thorns. We also have now the full range of complaints in the overall picture.

(Continued on Next Page)

Letterpress Proofing Problems and How To Solve Them

By MELVIN L. GEBHARD*

**Development Engineer, Minnesota Mining and Mfg. Co., St. Paul, Minn. Abstracted from address delivered before the convention of American Photo-engravers Association, Philadelphia, October 1946.*

SPHEREKOTE tympan paper for proofing is a paper backing coated with small solid glass balls. The beads coated on the actual tympan sheet are about 0.002 in. to 0.004 in. diam. They are coated one layer deep and there are approx. 50,000 to 100,000 to the sq. in. Spherekote is coated in many different bead sizes and also a number of different weight backings, including some that are oil-proof.

It was found that the type 17C Spherekote had advantages on letterpress proofing presses, both as a tympan and also as a frisket paper. This particular sheet has been coated with very small glass balls or beads, about 0.002 in. diam. The sheet has also been factory precompacted. After these glass beads have been coated on the paper the sheet calipers about 0.0085 in. It is then compressed to caliper about 0.006 in.

When Spherekote is used as a tympan on proof presses, it is put on with the bead side toward the outside of the cylinder. The hard glass surface of the tympan will result in an accurate reproduction of the plate. Because the sheet has been precompacted, very little embossing or indenting of the tympan is encountered. This results in longer life with few tympan changes.

When using Spherekote on single-color proofs, the bead side of the sheet goes towards the plate. The small glass beads keep the ink away from the paper backing and consequently the ink will not penetrate the sheet no matter how many proofs are pulled on the same frisket. The beaded surface results in less piling of ink. You have only points in contact with the ink and therefore the frisket breaks clean from the plate with very little drag or suction. Spherekote has enough body so that fancy cut-outs can be made with little danger of tearing or turning over the weak portions of the frisket.

When doing multi-color proofing, the proofer tries to duplicate the same conditions which the printer will encounter when using the plate. In many cases, this means proofing the second, third, or fourth colors while the previous colors are still wet. Here Spherekote is used with the bead side of the frisket towards the proof. This means that only the glass beads are in contact with the previous wet colors and results in less picking, smearing, or offsetting of the previous proofed colors. Although the bead side goes toward the proof rather than the plate, Spherekote is still ink proof and no bleeding of the ink will occur. Spherekote can be washed with any of the common solvents such as kerosene, gasoline or type wash.

Spherekote, when used as a frisket for single color proofing, results in no ink penetration, less trouble with intricate cut-outs, no ink piling, and fewer frisket turn-overs. On multi-color proofing, Spherekote is ink-proof and prevents previous wet colors from picking or smearing.

ATF Open House

More than 1500 persons in the printing industry in the St. Louis area were invited to an open house in March at the American Type Founders' branch, 2135 Pine St. Ned Rudolph, manager, said the latest models of printing equipment and supplies were shown.

These, then, are the negative destructive values that undermine your entire business structure right to the foundations.

6. Another score card, with many headings, is set up. Every constructive suggestion is analyzed, then recorded under its proper heading. With the above procedures we soon learn what the intensity of requirement is on each suggested improvement. These are the positive constructive values that could strengthen your business structure—and pay off with that priceless gem, business harmony.

7. Then all the questionnaires, and other identification papers, are destroyed. Only the score-cards remain for use.

8. By this method the business consultant has quickly struck to the root of the many smoldering causes of dissatisfaction in the entire overall structure—in the short space of days; rather than by other methods that only scratch the surface and may take many weeks or even months. Now, with this X-ray of the company's weaknesses, the business counsellor diagnoses the most expedient ways and means to effect the curatives. At this point management is again contacted and the recommendations are then thoroughly analyzed—both the positive and the negative.

9. Where a plant has union representation, each recommendation that may fall under the jurisdiction of any local union must be submitted for their approval.

10. Management should encourage a monthly round-table discussion with management-labor participation. All topics that will develop into improving relations are encouraged. A report on all installations derived from the previous recommendations are turned in for study. The business counsellor attends each of these meetings to study trends, and learn where continuing improvements can be effected. Each department votes for one of its group to represent it at these vitally important meetings for 6 months. Supervisory can sit in at this time, or come in a half-hour later to the meeting, so that labor is given a full chance to express itself without fear of reprisals from supervisory—if conditions should have reached that stage.

We must remember that the employees are closer to the undercurrent (and the causes) than management can ever hope to be. Employees are familiar with the many vexing problems and leaks that they are compelled to cope with, while management only sees the surface conditions and indications of a smoldering undercurrent. Crude and antiquated methods of effecting a cure usually are of a temporary nature only and prolong the day when the zero hour may arrive, with its added pressure that has accumulated in the interim.

We all remember the crux of that old adage: It was the sunshine, and not the strong wind, that induced the traveller to shed his coat. By like token, we might as well substitute more pleasant methods to accomplish our mutual objectives of labor harmony, rather than permit the fury to be pent up to the bursting point—and then try to escape from the explosion that may follow. That destructive force hurts labor, management, and our entire national economy, all at one stroke. By employing the proved American system of "a voice via the ballot" your own employees can solve many of your malignant business riddles at once.

New Products and Services

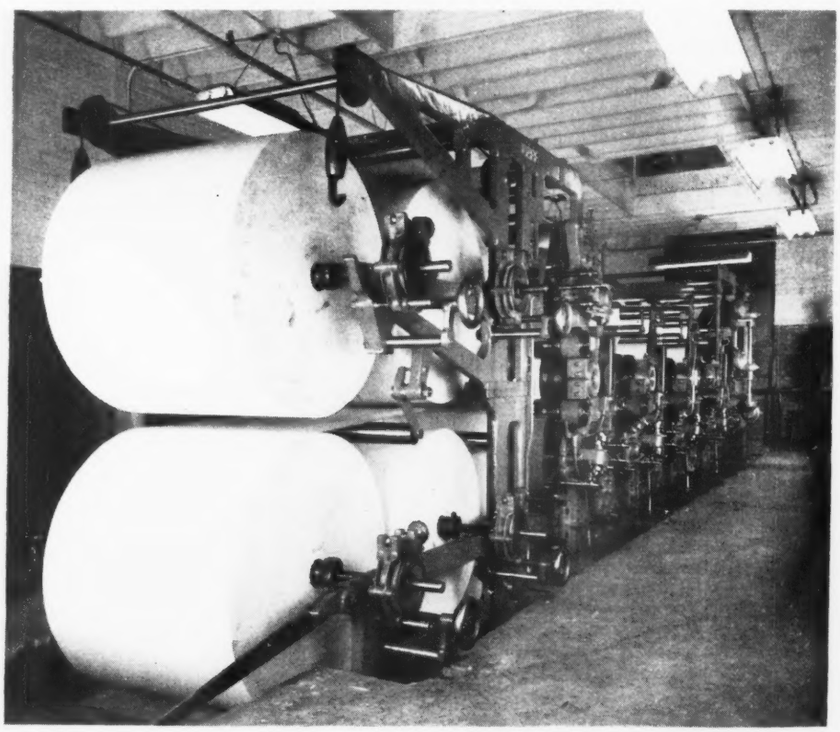
Over 850 innovations, the latest products being marketed by 627 firms this year, are described in the 1947 Edition of *New Products and Services*, a new 64-page booklet just published by *The N. Y. Journal of Commerce*. Complete with names and addresses of manufacturers and an index of manufacturers and products, it provides an opportunity for both businessmen and consumers alike to find out what is new in industry and in the markets of the world. Copies of this new study, the second on postwar innovations issued by the business newspaper, can be obtained from The N. Y. Journal of Commerce, 63 Park Row, New York 15, N. Y., at 50c each.

New Products and Services covers a lot of things from self-wringing mops made of rubber to all-plastic railroad cars. It is a word picture of American genius at work, and many of the items described are the long expected wonders promised for the post war world.

New industrial processes as well as consumer items are revealed. Included are a new bag machine that turns out 12,000 transparent, heatsealed bags per hour and a new cargo control winch that will set a five ton load without a jar. Metal alloys that will withstand the tremendous heat developed in gasoline turbine engines are described. Improved lift trucks that give a new efficiency to warehousing space, rubber cemented to steel for use on propellor shafts and a huge dry food mixer that will handle 7,600 pounds at one time are other innovations. A new wool weaving process in which a seaweed chemical adds strength to the fibers and permits weaving of cloths as light and filmy as silk, and a new fluoroscopic testing device that "sees through" metals and reveals hidden flaws more easily and inexpensively than before show further the varied coverage of the latest Journal of Commerce study.

Elects Officers

The Higgins-McArthur Co. of Atlanta, Ga., announces the election of new officers. Richard N. McArthur has been made president and treasurer. Kenton B. Higgins was elected vice president and secretary, and Robert H. Smith, vice president and sales manager.



The News Printing Co., Goshen, Ind., publisher of the Goshen *News-Democrat*, has installed a new Goss Unitube press which is housed in a recently constructed 18 by 63 ft. addition to their plant.

The press has facilities for printing up to 16 pages with one extra color on two pages or three colors and black on two pages up to a maximum capacity of 12 pages. The press is equipped with tension plate lock-up, continuous feed ink system, and reversible printing couple.

The layout of the remodeled plant provides for the stereotyping department and press room on the first floor level. Mechanical operations are under the supervision of Leonard Clemons.

Prior to the present Unitube installation, the *News-Democrat* was printed on a Goss Double Unit Cox-O-Type press. The increased press facilities will enable the newspaper to offer its readers and advertisers better service, particularly in the handling of color, according to O. M. Kinnison, publisher.

Plant and Equipment Layout—

Sound advice presented by well-known engineer to mechanical and production executives—Applicable to publication, commercial and newspaper executives

By A. C. ARNESEN*

**Engineering Dept., American Type Founders, Elizabeth, N. J. Address delivered before Northwest Mechanical Conference, Minneapolis, Minn., February 1947.*

THE problem of plant and equipment layout in the newspaper composing room is something which is rather wide in scope. It is a lot easier to take a specific plant for analysis. We can, however, mention some points common to all newspaper composing rooms, whether large or small, for comment in general.

Let us start with management. When we speak of management here, we are referring only to those executives who are responsible for production. In order to produce a job of printing, which in this instance is a newspaper page, manufacturing management must provide certain facilities in an economic manner. "Economic" in this sense is not necessarily the cheapest, but means getting the greatest percentage of return on money invested. We might break down these facilities as follows:

1. Housing. To secure adequate quarters for operation is a joint task with the executive department.
2. Obtain personnel. In the present postwar readjustment there is considerable confusion, as we all know.
3. Provide manufacturing control and scheduling so that we can utilize our equipment to the fullest measure.
4. Install and operate a cost system.
5. Select and provide equipment to meet production demands.
6. Arrange equipment so personnel can get the greatest output from it.

These six factors: housing, personnel, control, scheduling, costs, equipment and the arrangement of equipment, may be regarded and treated individually, yet they must be considered collectively as well. If one of them is neglected, the detrimental effect cannot be overcome by presenting ideal conditions to meet the remaining factors. All the factors must be studied and woven into the general plan of operation if we expect to realize worthwhile returns.

I mention these cardinal factors and their interdependency, one on another, because they must all be taken into consideration simultaneously. Good craftsmen in the composing room, for example, cannot overcome the hindrances of slow, obsolete equipment. On the other hand, even if the equipment is modern and it is illogically and poorly arranged on the floor, the efficiency of such equipment is partially destroyed. We must satisfy all the factors to the best of our ability, so that every link helps to make a well-forged production chain.

Suppose we feel that a rearrangement of our plant is desirable in order to lop off some apparent excessive costs, it will pay us to investigate other factors as well as equipment and layout.

Equipment and its Arrangement

As you know, the total production problem can be very complex, presenting many facets of these interdependent factors. It would take a long time, even in an elementary way, to discuss all of them. For the present, we shall confine ourselves to equipment and its arrangement in the plant. These two subjects are closely allied but it will only be possible to dwell on some of the high spots.

Equipment is our first problem. Most of us are machinery-minded. It is very gratifying to stand at the delivery end of a press and see printed papers come off, ready to go to the street. We can realize the actual production from the machine.

Now let us take a look into the composing room. We cannot count lock-up forms in the same terms as we count printed sheets. The tempo has changed, but the need for modernization is just as important in the composing room as it is in the pressroom. I believe we are all conscious of the fact that the pressroom receives more attention than the composing room does when it comes to being up-to-date. Aside from line-casting and type-casting machines, modern composing room equipment is not in itself productive. The modern makeup and storage equipment enables the compositor who works with it to produce economically. Here are some of the reasons why this is so:

1. *Accessibility of Materials.* All frequently-used materials such as leads, type, slugs, spaces, quads, etc., are within arm's reach, thus eliminating unnecessary walking.
2. *Ready Reference.* Proper indexing and filing methods for forms, cuts and reserve material reduce hunting and searching time.

Photo-engravers' Copy Board Frame Lid Lift Spring—E. N. Camus, manager of the Service Engraving Co., Sun-Telegraph Bldg., Pittsburgh, has applied for a patent on a lift or torsion spring device which minimizes the physical exertion required to lift the lid on photo-engraver's copy frames. As designed by Mr. Camus, one of the springs is attached to each side of the hinged portion of the cover and frame as shown in the accompanying illustration. Mr. Camus states the springs relieve 90% of the weight of the lid.

On metal frames, springs may be attached by support plates as furnished with each pair of the springs. On wooden frames, the plates may be fastened with wood screws. In the case of channel frames, the spring support plates are placed on each side of the thin metal channel partitions.

The springs are made to conform to the weight to be lifted. Photo-engravers will appreciate avoidance of fatigue caused by lifting heavy frames after negative exposures. Production of the device, states Mr. Camus, is progressing rapidly.

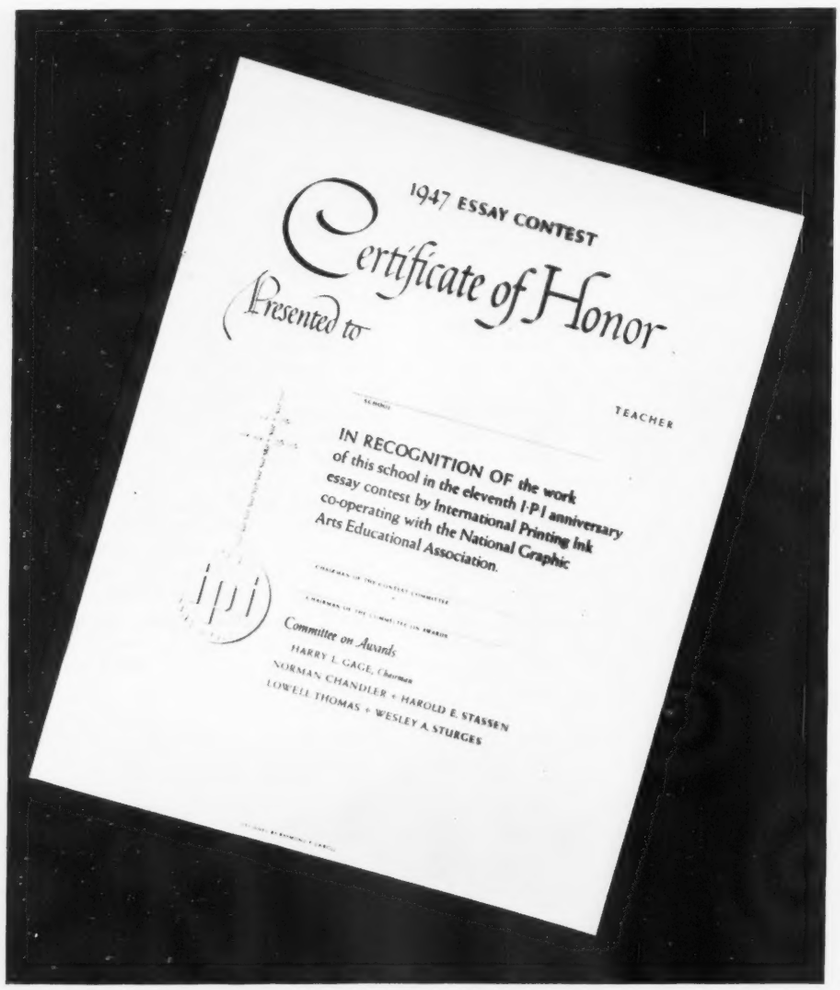
3. *Ease of handling.* It reduces fatigue.
4. *Safety.* Safety of operators, safety of work in process and finished forms; less time lost through injuries and less pi.
5. *Economy of Floor Space.* Modern equipment occupies less floor space than does the obsolete. It is of compact design and permits close spacing of units, therefore reducing walking time.
6. *Arrangement.* Modern equipment is designed so that it lends itself to a streamlined arrangement for easy and proper flow of work from one process to the next.

Expressing Size of Composing Room

When we express the size of a newspaper composing room, we generally do so in terms of line-casting machines. We say so many Linotypes, Intertypes, so many Ludlow casters. These machines are highly productive when we keep them in sound mechanical condition. They provide, excluding cuts, most of the material that goes into the form: type, leads, slugs, rule and base. It seems apparent that in order to realize the utmost from these expensive machines we should provide proper equipment to handle the slug matter until it is finally locked up in the chase. There should be ample space for dumping news and ad matter. There ought to be good facilities for proofing and correcting news matter.

Bringing Materials to Man

This equipment should be provided with banks or racks to hold the most frequently used matter. In the ad alley, the cabinets used to convert type or type slugs into ads, from the smallest to page size, must contain ample supplies of leads, slugs, rules, etc., in labor-saving sizes, so that compositors do not have to go to the saw except for the usual operations. In the makeup section, whether turtles or tables, or a combination of the two is used, facilities for rule and other material must not be overlooked. In short, bring the materials to the man. Then you are paying for work done—not for walking.


1947 ESSAY CONTEST
Certificate of Honor
Presented to
TEACHER
IN RECOGNITION OF the work
of this school in the eleventh I-P-I anniversary
essay contest by International Printing Ink
co-operating with the National Graphic
Arts Educational Association.
Committee on Awards
HARRY L. GAGE, Chairman
NORMAN CHANDLER • HAROLD E. STASSEN
LOWELL THOMAS • WESLEY A. STURGES

Raymond F. Da Boll, designer and calligrapher, designed the 1947 Certificate of Honor presented to teachers by International Printing Ink for their cooperation in the 11th Annual Essay Contest. In describing his approach to this design Mr. Da Boll said, "My first consideration in designing the certificate was to avoid resemblance to what had been done previously. My natural tendency is toward informality. The first two lines are visually but not actually centered, either on paper or in relation to each other. The initial C is drawn within a circle of the same diameter as the device blind-stamped below it. Weiss Roman was chosen because of its classic modern character and would relate well to the hand-drawn design and to offer a hint of the style which the scribe might follow in filling the names of teachers and schools. As a decorative fillip I have suggested that the scribe make a freely drawn plus sign before the name of the school, the sense of this being teacher plus school."

Composition was done by Edwin Gillespie of Bertsch & Cooper; the printing by the Advance Lithographing Co.; the dies and stamping by the Stauder Engraving Co. The stock is Keith diploma parchment. George C. Domke of the Chicago Art Institute school of Printing supervised production throughout.

First Give Thought to Building

Before we go into some of the questions of plant layout, we ought to give a little thought to the building being occupied. In the case of a new building, there are certain things to avoid. If we are in a building which has some objectionable features, we might be able to eliminate all, or at least some of them.

When inspecting a building as a possible location for our plant or, if we suspect that certain changes in our present building would be to our advantage, it would be a good idea to make a check list of points that should receive special consideration and study. First, we should avoid choosing a building where the rooms are excessively cut up by stair wells, elevators, offices and other projections into the room, unless we are in a position to correct this condition with reasonable expense. Effective floor space is lost where rooms are all cut up by projections. If it is necessary to resort to less desirable space, it would be very helpful if objectionable features were removed entirely or at least changed for better convenience. If necessary, employ the services of an architect. It will prove to be a good investment in the long run.

Ventilation, heating and sanitary facilities are factors affecting health and must be given proper attention. It is necessary to provide physical comfort and healthful surroundings if we want to avoid absenteeism due to illness down to a minimum.

Lighting System a Necessity

Natural light is helpful, but not necessary. Even where plants operate only during the day, a good artificial lighting system is a necessity. The recommendations of lighting engineers are good, even though some of us feel that they are trying to load us up with a lot of superfluous lighting fixtures and equipment. Nevertheless, I certainly should not overlook anything as important as good lighting. Too many things are dependent on it in a printing plant.

Other Conveniences for which to Look

There are other conveniences to look for in the selection of a plant location. Fire and accident hazards must be avoided. Elevators must be of sufficient capacity and size to accommodate our equipment, otherwise rigging and other expenses will boost installation expense. Loading docks accessible to auto trucks must not be overlooked so that stock handling becomes a major problem. Floor load is another item on the check-

list. It is just as necessary to have a local engineer or architect verify the permissible floor load as it is to have a title search made when buying real estate.

We have to convince ourselves that the proposed quarters are satisfactory and meet the demands of the check-list in all details. Then we must make a preliminary layout to test whether or not there is sufficient floor space to house the plant, plus any expansion we may anticipate within a reasonable time in the future. This preliminary layout never becomes the final arrangement. So many ideas and improvements enter the picture that revisions are always necessary. At any rate the preliminary layout serves to prove the floor space required.

Making the Layout

We can seek outside help to make the layout in order to get the experience of others or, if we do not feel so disposed, we can do the job ourselves. I think we all agree that a knowledge of printing processes and printing equipment is a prerequisite for the task. Besides this, we must have some imagination and a sense of proportion—and a few fundamentals of plant layout. Basic data on plant layout can be had from several sources. Handbooks and text books on industrial engineering, although they do not deal specifically with printing plants, do offer constructive ideas. The printing trade journals give reliable information from time to time on various phases of plant layout. Some of the printing equipment manufacturers also have data on the subject which may be had free on request.

The layout itself is not such a difficult task if we exercise care in the preparation of the material we are going to use. If an architect's drawing of the space is available, a good part of the job is done, especially if the drawing is to the scale of a quarter inch equals one foot. This scale is the most desirable from the standpoint of handling and easy visualization. If there is no drawing of the space, then it will be necessary to take some measurements and make an accurate sketch. I shall not outline the procedure to do this, but emphasis must be laid on accuracy and faithful reproduction of the physical characteristics of the room. Do not omit columns, ladders, standard pipes, etc. If you do, later on you will invite embarrassment.

It is a good idea to paste the floor plan drawing on a sheet of pressboard or heavy cardboard, as no doubt it will be subjected to a lot of handling.

The next step is to prepare the templates. You might save yourself some time by getting a supply of templates of standard equipment from some of the equipment manufacturers. They may be had for the asking. They are made on the same scale, one quarter inch equals a foot, as the floor plan sheet we have just mentioned. If you have to make your own templates, measure the equipment accurately and draw the overall size to scale on heavy paper—different colored paper if you want to distinguish one department from another. *Don't* include working space with the templates for this reason: space between the equipment is the only variable we have to work with in making the arrangement. The other two factors which determine layout, namely equipment proper and the available space, are fixed. We can't alter them very easily.

Direct-line Layout

In many fields of manufacturing, including printing, the direct-line layout by product is used. Modern equipment which comprises a well-balanced printing plant is said to be arranged in a direct-line layout when the output of the various departments is completed in sequence as required by the next successive department. This type of layout provides a continuous flow of work from one end of the plant to the finished product at the other end. Productive activity is in one direction, from source of copy to the mat roller.

The advantages to be gained from this type of layout are numerous:

1. Minimizes back tracking.
2. Facilitates scheduling and control.
3. Reduces type and form handling.
4. Conserves floor space for work in process.
5. Eliminates bottlenecks.
6. Permits easy supervision.
7. The final result of all these benefits adds up to a lowering of production costs, which is, after all, what we are seeking.

The actual placing of templates on the floor plan sheet follows certain pattern arrangements which, over a period of years, have been found to be most advantageous. These patterns vary with the contour of the room and are affected by the size of the plant as well. The subject of pattern arrangement is too extensive to deal with at present. Here again the trade journals can give helpful ideas. Articles have appeared, now and then, covering actual installations.

Spacing the Equipment

As to spacing of equipment, here we have, as previously stated, the only variable in plant layout. Even if there is a great deal of floor space available, it is not good practice to place equipment too far apart. I like to think of excess floor space in terms of expansion rather than for immediate use.

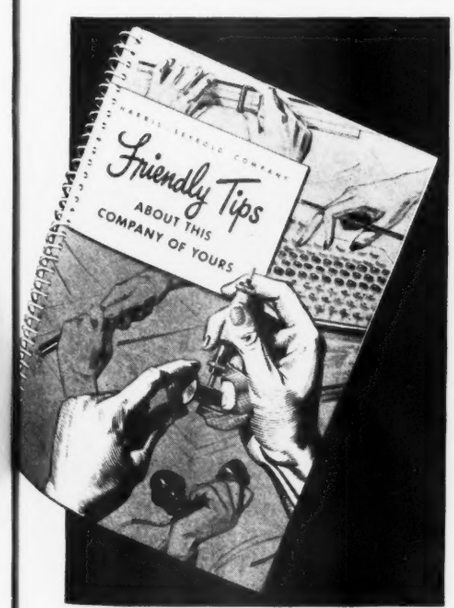
I mentioned a few minutes ago that management is charged with the duty of furnishing machines and equipment. Furthermore, the equipment selected must be modern, space-saving and time-saving. Only modern equipment meets these specifications and only modern equipment makes it possible for personnel to produce at maximum safety and a minimum of fatigue.

Direct-line layout and adequate, modern equipment go hand-in-hand. The value of modern equipment is partially destroyed when that equipment is illogically placed with utter disregard for sequence of operation. It is also safe to say that a good layout cannot be effected through the use of obsolete, space-wasting material. Modern equipment is compact, making it time-saving as well as space-saving, and it is readily adapted to the well-planned layout. When you are working with the templates on the floor plan sheet, you will soon observe the shortcomings of obsolete equipment. It's too glaring to miss.

If you undertake to make a layout for the first time, don't be dismayed if you don't get the answer after a couple of attempts. It may take quite a few trials to reach a satisfactory conclusion.

Employee Booklet

Corporations are usually considered by an employee to be soulless. Occasionally a company will contribute an exceptional example of good employee relations to disprove this to its employees. Such an example is the 40-page booklet entitled *Friendly Tips* by the Harris-Seybold Co. The historical background of the Harris-Seybold organization and its founding is presented in an interesting manner. Photographs, pictographs and drawings are used to tell the story of company policies governing manufacturing, sales and employes relations. The booklet has been distributed to all members of the present organization to develop closer understanding between employees and management. It is also used in recruiting new personnel.



Front cover of *Friendly Tips* issued by Harris-Seybold Co. to its employees.

Changes Name

Announcement has been received that Rudisill and Smith, printers and offset-lithographers, has changed its name to Rudisill and Company, Inc. The company continues in enlarged quarters at the same location, 109 W. Chestnut St., Lancaster, Pa.

EXECUTIVE ¶s

John E. Allen, editor of *The Linotype News*, spoke on *Modern Trends in Newspaper Makeup*, at the annual convention of the Columbia Scholastic Press Association, at Columbia University, recently. He also addressed members of the Southern Interscholastic Press Association, at Washington and Lee University the latter part of April.

Everett A. Roles has joined the sales organization of the Howard Flint Ink Co. His headquarters will be in the Flint

Everett A. Roles of Howard Flint sales organization in Los Angeles.

factory at Los Angeles. After graduation from the University of Nebraska in 1923, Mr. Roles entered the ink industry as a chemist. He is a 32nd degree Mason, a member of the Craftsmens Club, Kiwanis Club, and the American Legion.

Two new vice presidents have been elected by the Ideal Roller & Mfg. Co., it was announced recently by E. B. Davis, senior vice president. Bruce W. Hubbard, director of research, and Norman L. Rowe, manager of the Long Island City branch were made vice presidents of the company.

John J. Rheinfrank, physicist, has joined the staff of Battelle Institute, Columbus, O., where he will be engaged in graphic arts research. Mr. Rheinfrank holds B.S. and M.S. degrees from Ohio State University and also attended the University of Rochester. Prior to joining the Battelle staff, he was a physicist with the Eastman Kodak Co.

Appointment of Robert W. Ferrell, formerly counsel for the General Electric Electronics Dept., Syracuse, N. Y., as manager of Employee and Community Relations of the Affiliated Manufacturing Companies Dept. of the General Electric Co. was announced recently. L. R. Boulware vice president, is general manager of the department representing seven affiliated companies of General Electric.

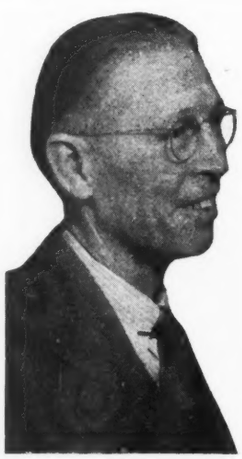
George A. Wilkinson, a Washington attorney, has been appointed executive manager of the District of Columbia

George A. Wilkinson, executive manager of District of Columbia Paper Merchants Association.

Paper Merchants Association. It was announced by Clyde E. Kellogg, of Stanford Paper Co., president of the Association. In the past the group has depended upon a member of the association as secretary. With the return of normal competitive conditions, the services of Mr. Wilkinson were enlisted to secure the cooperation of all members to accomplish those things which can be done better as a group. After a preliminary survey he will present a plan for unified action to insure fair trade practices and healthy growth in the paper distributing field around Washington.

Norman F. Draffin has joined the Spiral Binding Co., Inc., as a sales representative. Prior to the war he was director of the Advertisers Research Bureau for Sigmund Ullman Co.

Robert F. Comstock has been appointed Linotype production engineer for Saskatchewan and Manitoba.



CORRECTION:—In the March issue of *Printing Equipment Engineer* the cut shown with the news item about the passing of George Kennell was not that of Mr. Kennell. Shown here is the likeness of George W. Kennell, southwestern representative of the Certified Dry Mat Corp. He died in Galveston, Tex. recently; his home was in Albuquerque, N. M.

Ralph C. Persons, general manager of the Geo. H. Morrill Div., Sun Chemical Corp., has announced the appointment of his former assistant, C. A. Brattstrom, to be mid-west manager of the Geo. H. Morrill Div. Mr. Brattstrom will be located in Chicago. In his new capacity he will be in charge of coordinating sales for the Chicago, Detroit, St. Louis and Fort Worth districts. L. D. Pollock will be Chicago Branch Manager. He represented Geo. H. Morrill in Chicago in 1941 before he joined the armed forces.

Stuart E. Arnett, sales manager of the Printing Machinery Div., Electric Boat Co., announces the appointment of

Owen E. Adams joins the Printing Machinery Div. of Electric Boat Co. as sales promotion manager.

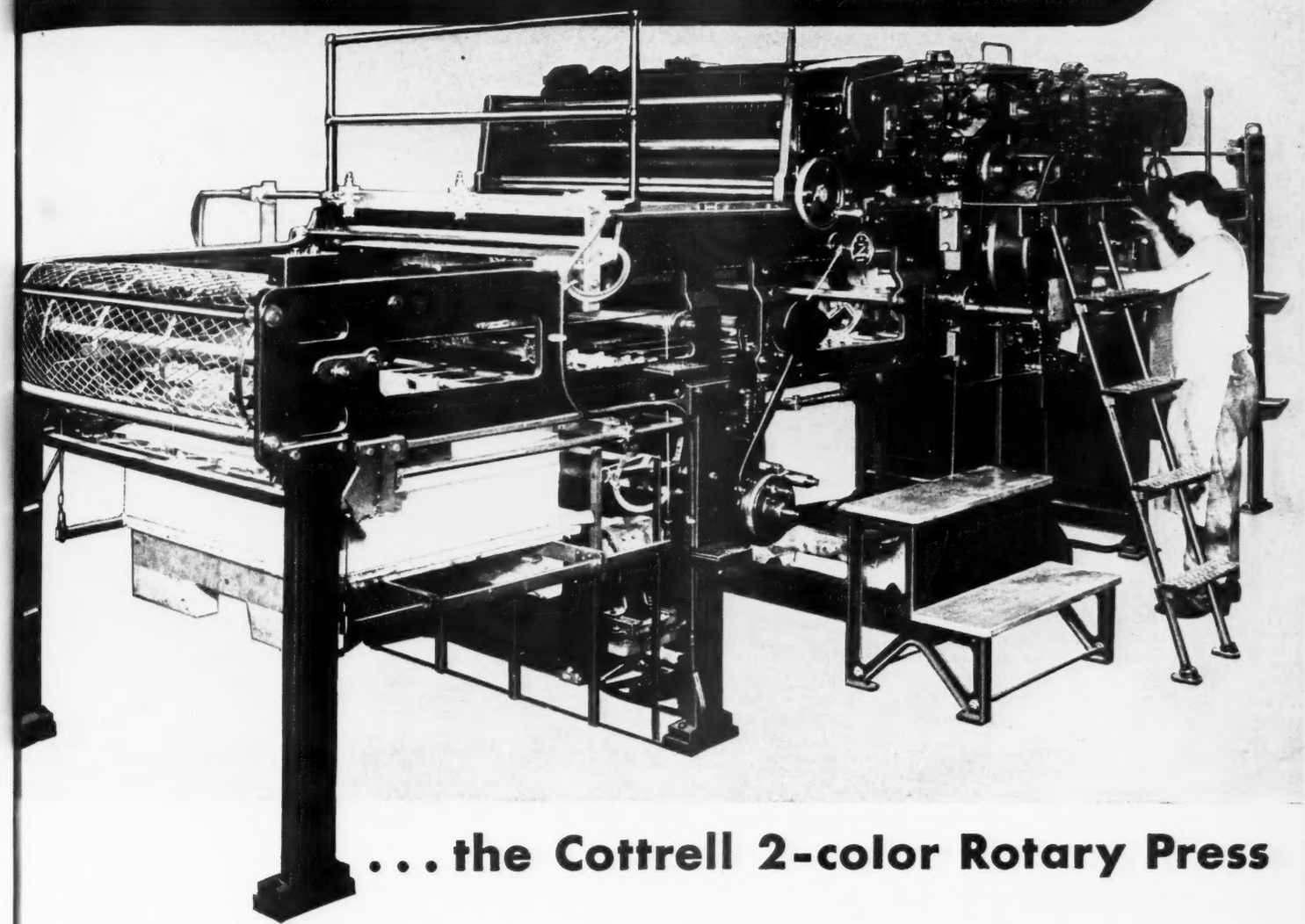
Owen E. Adams as sales promotion manager. Mr. Adams was formerly advertising manager and salesman for the Bensing Bros. & Deeney Co., of Philadelphia. He is a member of the Lehigh Valley Club of Printing House Craftsmen.

William Paul Porter, machinist on the Jacksonville (Fla.) *Times-Union*, was drowned in an unusual accident recently. He drove some friends to their home in an unfamiliar section of the city. On his return trip he was driving on a dead-end street which was paved to the edge of the St. John's River. On account of the fog and rain he did not see the river's edge. A Navy crash boat and squad located the car and raised it from the river. He had been with the *Times-Union* for four years. He is survived by his wife and two daughters.

Edward G. Williams, president of American Type Founders Corp., Elizabeth, N. J., has announced the appointment of Robert G. Marquardt as vice president in charge of domestic sales of the company. C. D. Proctor, formerly vice president in charge of domestic sales of the company, will assume the duties of sales promotion manager. Mr. Marquardt, joined ATF in 1934, was made manager of the company's Cincinnati branch in 1943. E. A. Damon has been appointed assistant manager of ATF domestic sales.

Mr. Marquardt has also announced the appointment of Louis A. Croplis, former assistant foreign sales manager of the company, as manager of the Cincinnati office. The post of assistant foreign sales manager of the company will

FOR GREATER *NET PRODUCTION*



. . . the Cottrell 2-color Rotary Press

At a running speed of from 5500 to 6000 sheets per hour printing in two colors, the Cottrell 2-color rotary press is the outstanding printing unit in its class in the world today in that its net production is commensurate with the speeds given.

C. B. COTTRELL & SONS CO.
Westerly, Rhode Island

New York: 25 E. 26th St. • Chicago: Daily News Bldg., 400 W. Madison St. • Claybourn Division: 3713 N. Humboldt Ave., Milwaukee, Wis. • Smyth-Horne, Ltd., 13 Bedford Row, London W.C. 1, England

Cottrell

ER 92 YEARS OF GROWING WITH THE PRINTING INDUSTRY

be filled by Alfred Heydenreich, it has been announced by Louis E. Pleninger, vice president in charge of the company's foreign sales.

The Printers Supplymen's Guild of Chicago will hold a testimonial dinner May 2, at the Bismarck Hotel, Chicago,

A. F. Lewis honored by Chicago Printers Supplymen's Guild.

Ill., to honor A. F. Lewis of *The Printing Trades Blue Book*, and *The Graphic Arts Monthly*. He has been connected with the graphic arts industry for many years. His first job in a print shop was with the Nashville *Banner* as a printer's devil. He afterwards set type, and in order to reach the top of the frame, he had to stand on a box. He got his first Chicago job in 1892. This was with the Excelsior Co. in charge of the Job Department: after which he was with Walters & Walters as foreman over 100 men and 90 girls at the munificent salary of $12 a week. At the time he was married, he was working for Ed Rogers, day foreman of the Chicago *American* ad room. When Rogers left to start his own plant, Abe went with him. Shortly afterwards, he left Rogers to go into business with Eugene Clark as Clark & Lewis, which later was consolidated with the F. W. Brenkle plant and became known as the Atlas Printing Co. Lewis founded the *Printing Trades Blue Book* in 1909, and *The Graphic Arts Monthly* in 1929. He is also one of the originators of the Order of Pica, which was the forerunner of the present Printers Supplymen's Guild.

The Linotype Co. announces, through John L. Davis, manager of its Southern agency, New Orleans, that Joe F. Schuman, production engineer in parts of Florida, Georgia, Alabama and Tennessee, has been made sales promotion manager of the Southern agency. Paul G. Poynor has been appointed to succeed Schuman.

Warren Robinson, pressroom superintendent of the New York (N.Y.) *World Telegram* has been appointed pressroom superintendent of The New York (N.Y.) *Herald-Tribune*. Arthur Kuhn, former pressroom superintendent of the *Herald-Tribune* has resigned.

William Ussher has been appointed superintendent of the composing room of the New York (N.Y.) *World-Telegram* to succeed Ray Skeehan, former composing room superintendent. Mr. Skeehan has not announced his plans for the future.

Fred W. Danner, president of the Danner Press, Akron, O., has been appointed a member of the board of governors of the Lexington, Ky. Hospital for Crippled Children, one of 15 such units maintained by the Nobles of the Mystic Shrine of North America.

Reginald Orcutt, Linotype vice president for overseas and author of *Merchant of Alphabets*, left March 28 for Cape Town, South Africa. About June 1 he will fly to London, and will spend the rest of the summer on the continent.

Dividend Paid

The board of directors of Hamilton Mfg. Co. declared a quarterly dividend of 25 cents a share on the preferential participating stock of the company, according to an announcement recently by E. P. Hamilton, president. The stock was formerly designated as Class A preferential participating stock. The dividend was made March 31 to holders of record at the close of business March 21, and covers the quarter from January 1 to March 31, 1947. It is subject to the 3 per cent (3%) Wisconsin privilege dividend tax.

School Publications Judges

W. H. Elliott, National Process Co.; J. J. Rockwell, Sackett & Wilhelms Lithograph Corp.; and A. A. Freeman of Books By Offset Lithography; were judges of school publications produced by lithography entered for awards at the annual convention of the Columbia Scholastic Press Association at Columbia University, New York, N. Y. Certificates of Merit were awarded by the Lithographers National Association which sponsored this eighth annual competition for lithographed school publications.

Annual Report

Sales and profits of Sun Chemical Corp. in 1946 were the highest in history, it was disclosed in the company's annual report released recently. Consolidated net sales for the year were $29,045,533 compared with $17,546,942 in 1945, and net profit, after all charges, amounted to $1,464,706, equal to $1.15 per share against 71 cents per share for the preceding year. The report reflects the operations for the full 12-month period of the major companies acquired by Sun Chemical during 1945.

Firm Incorporates

George M. Clark, president of American Publishers Supply, announces that beginning April 1, the name of the firm will be changed to American Publishers Supply, Inc., 17 Stewart St., Lynn, Mass.

Colors Changing in Center of Sheet

Abstract from address delivered by G. L. Erikson, Executive Vice President, Braden-Sutphin Ink Co., Cleveland, before convention of the International Association of Printing House Craftsmen, Montreal, Canada, September 1946.

THE "burning out" of colors in the center of large sheets is a real headache which often cannot be completely eliminated without the full cooperation of the pressroom in commercial printing plants. I have seen buff colors fade into light yellow in the center of the sheet—browns change to greens, pinks to buff and many other equally mysterious changes take place.

These color changes are nearly always caused by heat in the pile of paper. The heat may be from the press heater or it may be generated by the drying of the ink.

Oxidation is an exothermic (heat generating) reaction. When a piece of paper burns we see rapid oxidation in which the heat generated takes the form of a flame. The drying of oil is an oxidation process, much slower than actual burning, but heat nevertheless is generated.

The amount of heat generated will depend on the amount of ink, both in area and in thickness of film, and the amount of heat retained in the pile will depend on the speed of drying, the size of the pile, temperature of the surrounding air, the type of stock, and perhaps some other conditions.

Therefore, to correct this trouble when it does occur, the pressman can help by *not* using the press heater, by piling in small lifts, by carrying the minimum amount of ink, and by keeping the air surrounding the pile as cool as possible. Re-piling and "airing" the stock helps a great deal.

We have found that the critical temperature at which most of these color changes take place is between 140°F and 175°F, and this temperature is easily attained in the center of large sheets, especially with large areas of printing and with heavy films of ink.

Certain papers definitely are worse for this condition probably because they speed the drying of inks, and perhaps are better insulators because of a smoother surface.

The ink maker can help in this condition, by carefully selecting combinations of pigments which will not react with heat, by making the colors as strong as possible so that thin films will be carried by the pressman, and by keeping the ink as slow drying as possible.

In the example given of a brown changing to a green color in the center of the sheet, this brown was no doubt made with a chrome yellow, a red and a blue, and the red color was destroyed by the chrome yellow, leaving only the yellow and blue which made the green color.

Speaking of Good Mixers

One User Writes . . .

"We were rather skeptical of the claims advanced by the Linotype Company for this machine (Model 30). But after purchase and use for a number of years, we have found that the machine is capable of producing with the best that the Company has put on the market. It is fast, dependable, rugged, and lives up to the name of Blue Streak in every sense of the word."

Users of Blue Streak Mixers (Models 29, 30, 35 and 36) know their worth. Their capacity for setting mixed composition, the economies which they show in heads, food-store and other advertising composition, the saving of time in their continuous distribution features—all of these, and more account for their popularity.

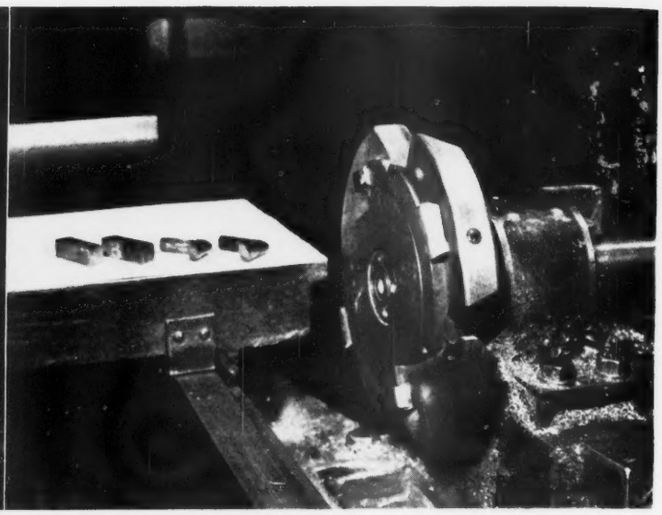
MERGENTHALER LINOTYPE COMPANY · BROOKLYN 5, NEW YORK

LINOTYPE

Linotype Garamond Bold No. 3 Series and Granjon

. . . Fast, dependable, rugged and lives up to its name in every sense.

The two gouger and the two finisher tools shown here, used in a Hoe Monorail Stereotype Trimmer, are tipped with Carboloy cemented carbide. These cutters are used 18 hrs. a day, 6 days a week in the stereotype department of the Detroit *News*. The carbide cutting tips were brazed to the specially designed steel shanks. Tools have been in constant use more than 4 years, it is reported.



Charles W. Finger, Sr. at the Detroit *News*, trims a block of stereotype metal with a cutter tipped with Carboloy cemented carbide. This new metal, made by powder metallurgy, is nearly as hard as the diamond. It is reported that use of these carbide cutters at the Detroit *News* has almost eliminated sharpening the knives.

Carbide Cutters Outlast Steel

To eliminate tool replacement and the sharpening of knives on its Hoe Monorail Stereotype Trimmers the Detroit (Mich.) *News* reports it installed Carboloy cemented carbide tipped knives in place of the conventional steel knives.

Monorail Stereotype trimmers at the Detroit *News* are in use approximately 18 hrs. out of the 24, six days a week. To cut down maintenance time on these cutters, the Stereotype Superintendent of the Detroit *News* and engineers from Carboloy Co., Inc., redesigned the gouger and finisher knives on the stereotype trimmer's cutting head. Cutting tips of Carboloy cemented carbide were then brazed to the steel shanks of the knives.

The carbide tipped stereotype trimmer knives were used 18 hrs. a day for two years before they had to be touched up. Then a light honing with a hand stone restored the cutting tips to keenness. Since that time, the carbide tips have been honed regularly every six months, the trimmer knives remaining in the cutter head during the retouching. To date, the Carboloy cutters have been in service more than four years.

Publication Program

James R. Brackett, general manager of Printing Industry of America, has announced a new publications program. It will consist of a semi-monthly news letter entitled *PIA Management Reports*. The first issue consists of the *Graphic Arts Summary* that contains brief summary paragraphs on articles of importance in the industry's business papers, and an index of articles from many journals to aid members in obtaining the latest material on their problems.

The second issue of the reports will consist of *Industrial Relations Review*. This review will contain tables on contract wage, current legislative developments and information for letterpress and offset management in connection with industrial relations problems.

Now International In Scope

Photo-engravers Research, Inc., a co-operative scientific research organization, now has 52 participating member firms. It is also international in scope. Just recently, two new members were accepted. These are McManus Brothers, Cape Town, South Africa and Bomac Engravers, Ltd., Toronto, Ont., Canada. Photo-engravers Research, Inc., is maintained as a purely research organization for improving the photo-engraving process through a program of technical research in progress at Battelle Memorial Institute, Columbus, Ohio.

Conference Dates Announced

A. H. Schmeichel, president of the Iowa Daily Newspaper Mechanical Conference, has announced that the annual meeting will be held at the Burlington Hotel in Burlington, Iowa. The dates for conference are May 24, 25 and 26. John Hardiman of Des Moines, Ia. is vice president and Paul Kamler of Clinton, Ia. is secretary of the conference.

Hold Open House

Executives in the printing industry in various cities on the west coast were invited to attend an open house by the American Type Founders Corp. to see late models of printing equipment and the Little Giant press. The Los Angeles Club of Printing House Craftsmen visited the plant in Los Angeles on April 9. R. B. Huddleston, ATF advertising manager, spoke at a luncheon meeting of the Los Angeles Graphic Arts Association on April 11. The San Francisco Club of Printing House Craftsmen will attend an open house in its city on April 17, the Portland Club on April 18 and the Seattle Club on April 23.

New England Conference

The New England Daily Newspaper Composing Room Executives' Association will hold its annual meeting in Holyoke, Mass., May 3 and 4. There will be an informal get-together Saturday night. Sunday morning the group will visit the plant of the Holyoke *Transcript-Telegram*. George W. Holloway, Mechanical Superintendent of the Elizabeth (N. J.) *Journal*, will speak Sunday afternoon. Following Mr. Holloway's address will be election of officers and a discussion of composing room problems.

Hamilton Annual Report

In its annual report for its 66th year of operations, the Hamilton Mfg. Co., Two Rivers, Wis., reported earnings of $929,958 after provision for income taxes during 1946 as compared with revised earning of $342,133 after deduction of income taxes during the previous year. Earnings per common share for the year were $2.60 for the 300,000 shares outstanding as compared with $0.64 per common share adjusted for the 3 to 1 stock increase during the corresponding previous year.

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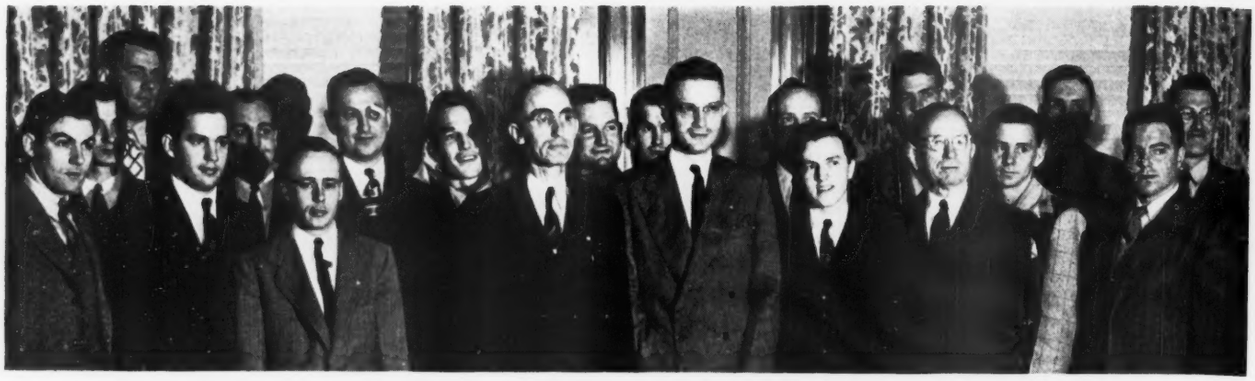


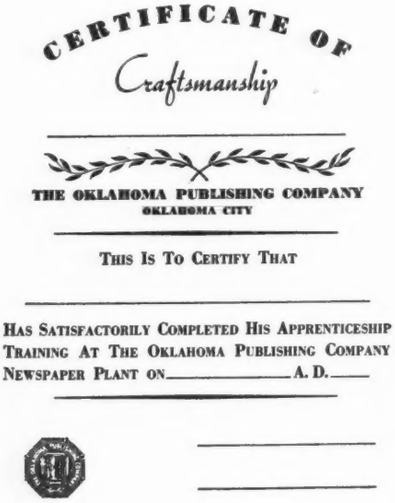
A group of apprentices were honored at luncheon recently by the Oklahoma Publishing Co. Front row, fourth from the left is Lee Whitsett, President of Typographical Union; fifth from the left is Herschel Jordan, apprentice awarded the *Certificate of Craftsmanship;* and second from the right in the front row is E. K. Gaylord, President and Publisher of the Oklahoma Publishing Co.

Apprentice Club Honored

The Oklahoma Publishing Co. honored the Apprentice Club at a luncheon recently. During the luncheon, President and Publisher E. K. Gaylord presented Herschel Jordan of the composing room a *Certificate of Craftsmanship.*

The Apprentice Club was organized a little over a year ago by Robert H. Spahn, administrative assistant, who specializes in employer-employee relations with the company. The Club meets once a month. Programs dealing with other departments of the newspaper, safety habits and visual education films are given. Union members of the apprentice committee are invited to attend.

Membership is limited to the apprentices of the five mechanical departments. The Club meets for dinner once each month. Talks are given by various department heads or visual education films are shown. The apprentices elect officers for a term of six months. It operates with as little interference from management as possible.



CERTIFICATE OF
Craftsmanship

THE OKLAHOMA PUBLISHING COMPANY
OKLAHOMA CITY

THIS IS TO CERTIFY THAT

HAS SATISFACTORILY COMPLETED HIS APPRENTICESHIP TRAINING AT THE OKLAHOMA PUBLISHING COMPANY NEWSPAPER PLANT ON_____ A. D.____

The Certificate of Craftsmanship is given to each apprentice upon completion of the apprentice training program.

Technical Research Sub-Committee for PIA

Printing Industry of America, commercial printing plant management executives' association, recently announced appointment of a number of sub-committees to consider different topics vital to the welfare of PIA. Of interest to readers of *Printing Equipment Engineer* is the personnel of the Technical Research Sub-Committee.

The Business Management Committee has one highly important sub-committee dealing with the program for establishing research relationships with the Government Printing Office. This sub-committee will sponsor legislation which will clear the path for this program.

The Chairman is Frank Pfeiffer, and the members are:

Donald L. Boyd (Standard Printing & Pub. Co., Huntington, W. Va.)

William G. Albrecht, jr., (The Albrecht Co., Baltimore).

V. Winfield Challenger (N.W. Ayer, Philadelphia).

Russell J. Hogan (Blanchard Press, New York).

Joseph M. Siegel (Trade Bindery, Inc. New York).

Bernard Snyder (American Typesetting Corp., Chicago).

Prof. Stanley C. Hlasta (Dept. of Printing of Carnegie Institute of Technology, Pittsburgh).

F. E. Street (Graphic Arts Assn. of Baltimore, Md.)

Elects Officers

The Southern Newspaper Mechanical Conference (Western Div.) elected officers for the 1948 conference which will be held February 18, 1948. The location of the meeting will be announced later. W. F. Thompson, Austin (Tex.) *American-Statesman,* was elected chairman; J. A. Riser, Oklahoma City (Okla.) *Oklahoman* and *Times* was elected vice chairman. The board of governors re-elected R. J. Crawford, Shreveport (La.) *Times,* and G. N. Guthrie, Little Rock (Ark.) *Gazette,* and elected Wallis A. Dupuy, jr., Baton Rouge (La.) *State-Times* and *Morning Advocate,* to three year terms on the executive committee.

The executive committee elected topic leaders for the 1948 conference as follows: Tommy Darst, San Antonio (Tex.) *Light,* Composing Room; Clyde Tabor, Dallas (Tex.) *Times Herald,* Pressroom; Emil Sumbera, Austin (Tex.) *American-Statesman,* Stereotype; D. W. Lamoureux, Shreveport (La.) *Times,* Machinist; H. W. Hartman, Houston (Tex.) *Post,* Photo-engravers.

Tentative Program for Pacific Conference

The 11th annual meeting of the Pacific Newspaper Mechanical Conference will be at the Hotel Biltmore, Los Angeles, Calif. The meeting will consist of a series of clinics. On Saturday, May 10, the following clinics will be held: Composing (over 10 machines) Linotype Machinists; Stereotype; and Web Pressmen. Sunday May 11, the Business Managers and Mechanical Superintendents, Photo-engravers, Color Pressmen and Color Stereotypers and Composing Room (under 10 machines) clinics will be in session in the morning. A banquet will be given Sunday afternoon and will be followed by a business meeting.

An invitation has been issued to publishers; business and production managers; purchasing agents and mechanical superintendents and foremen of composing, engraving, stereotype, pressroom, color press, mailing room, line-composing machinists, plant maintenance machinists, commercial engravers, commercial plate or mat makers, and suppliers.

Conference Officers Elected

The Northwestern Newspaper Mechanical Conference elected new officers for the 1948 Conference the week of March 10. Those elected were: President Charles N. Bertram, pressroom superintendent, St. Paul (Minn.) *Dispatch* and *Pioneer Press*; First Vice President Charles R. McGuire, assistant mechanical superintendent, Minneapolis (Minn.) *Star* and *Ttibune*; Second Vice President Joseph J. Cory, head machinist, St. Paul *Dispatch* and *Pioneer Press*; Secretary-Treasurer Vernon G. Eck, printing instructor, Dunwoody Industrial Institute, Minneapolis, Minn.

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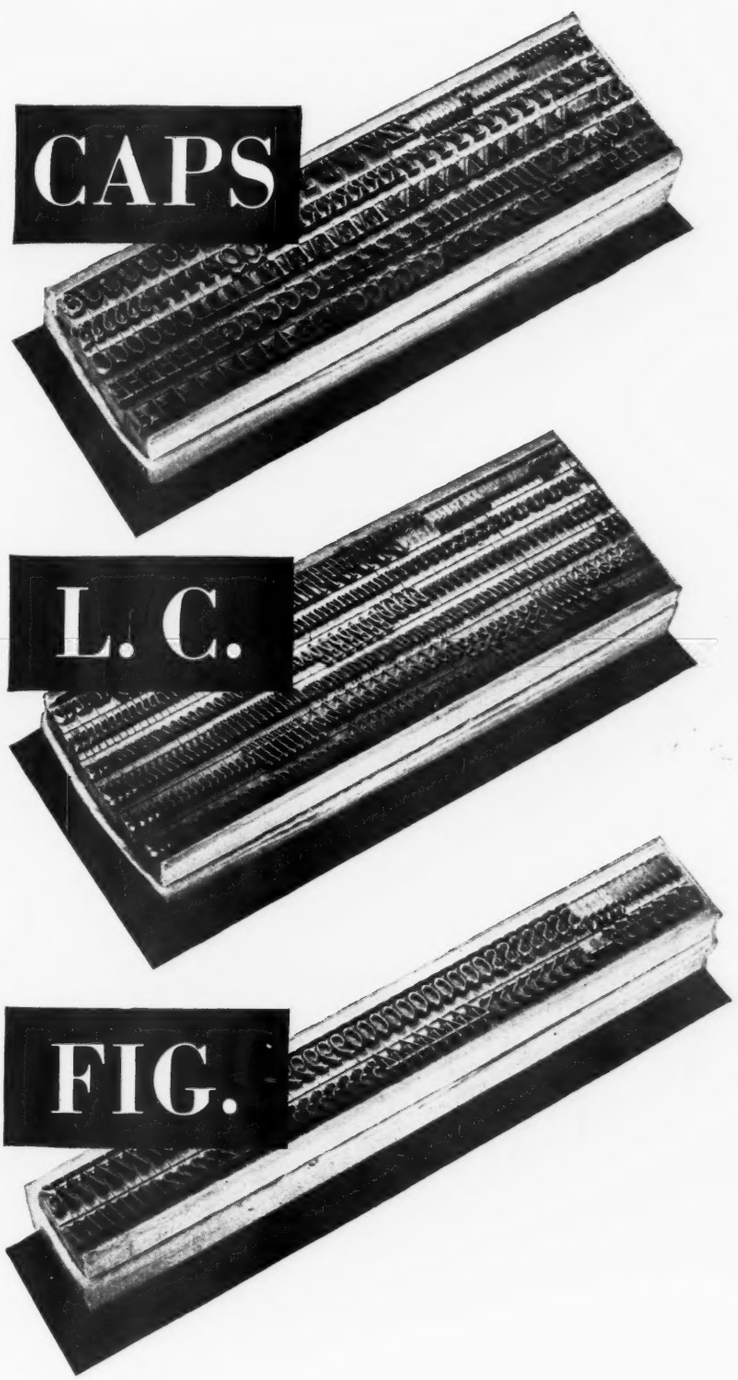
all lines filled with *type*



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1. **Caps and points**
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3. **Figures...and some points**

Even in title-line faces, figures and caps are separate. You don't have to take figures, if you want only caps. No need to fill your case with caps, if figures are all you require. Buy only the part or parts you can use.

The new packages consist of full lines of type, without useless reglets to fill short lines.

See the ATF Printers Catalog, or ask your ATF Salesman, for faces and prices.

AMERICAN
TYPE FOUNDERS

An ATF Associate

200 Elmora Avenue, Elizabeth B, N.J.
BRANCHES IN PRINCIPAL CITIES

Offers Standard Numbering System

A STANDARDIZED numbering system for ball and roller bearing dimensions was presented recently to the American Standards Association by the Anti-Friction Bearing Manufacturers Association.

The new code, presented by H. O. Smith, executive secretary of the Association, calls for a common means of identifying types, sizes, tolerances, modification of internal design and lubrication of standard ball and roller bearings to meet all the requirements of users. This new identification system, he pointed out, utilizes a combination of figures and letters alternately and is flexible enough to take care of future changes in design tolerances, lubricants and separator materials and is semi-descriptive rather than a dead code.

Mr. Smith pointed out that the industry's new numbering system permits the expression of more variable descriptions in terms of 4 digits, whereas the Army-Navy numbering system, which grew out of the war, is not only less flexible but must resort to the use of 12 digits since its system is basically a numerical one. In other words, the manufacturers of ball and roller bearings are able to convey all required information to bearing users in a much shorter and simpler form of standard identification. To the manufacturer this is of particular importance since in many types of bearings in the small size range it is sometimes impossible to stamp either the bearing or the package itself with an identification code which numerically runs into as much as 12 digits.

In a bearing designation such as the code 25BC02, it was explained that the 25 indicates that the inside diameter of the bearing is 25 mm.; BC is a code designation for single row radial non-loading groove assembly; and, finally, 02 indicates the series of the bearing and its outside diameter and width. Wherever more specific information is required such as seals, stet and lubricants, code letters and numerals are added. Under the Army-Navy system the 25BC02 bearing would be identified as 111X02502.

Mr. Smith revealed that the industry's new numbering system was used in its ball and roller bearing specification manual published in October, 1942, and was adopted by the Society of Automotive Engineers for inclusion in the SAE handbook first issued in 1943.

New! NO. 05 VANDERCOOK PROOF PRESS

automatic inking . . . 20 proofs a minute

This latest Vandercook is especially suitable for galley proofs of machine composition and made-up pages. Gives good proofs of halftones. Easy to operate, safe and foolproof.

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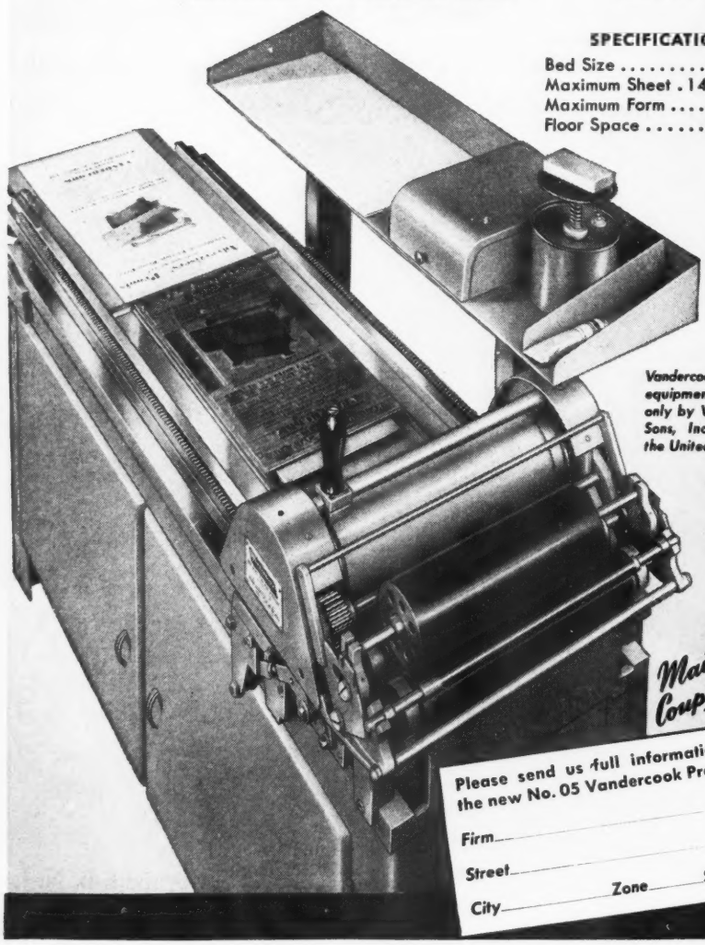
General Offices: 914 N. Kilpatrick Avenue Chicago 51, Illinois

SPECIFICATIONS

Bed Size .....15″x 26″
Maximum Sheet .14¾″x 28″
Maximum Form ....14″x 24″
Floor Space .....23″x 64″



Vandercook and Hacker equipment—now sold only by Vandercook & Sons, Inc. throughout the United States.

Mail Coupon Now

Please send us full information about the new No. 05 Vandercook Proof Press.

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Printing Education Conference

With the purpose of stressing the importance of printing and the need for a strong educational program, the National Graphic Arts Educational Association is planning its 22nd Annual Conference on Printing Education. It will be held in Chicago, June 16, 17 and 18, in the Board of Education Building. The annual banquet will be held at the Hotel Morrison, June 17.

Groups cooperating with the National Graphic Arts Education Association for the Conference are Chicago Board of Education, the Graphic Arts Association of Illinois, and Printing Industry of America, Inc.

The general committee on arrangements and program, as announced by Byron G. Culver, president of the Association, consists of Philip L. McNamee, assistant superintendent of Chicago Public Schools, general chairman; John A. Backus, manager, Department of Education, ATF Co., Elizabeth, N. J.; Loren H. Carter, supervisor of training, The Lakeside Press, Chicago; Eskel L. Erickson, supervisor of print shops, Chicago Public Schools; Harry L. Gage, vice president, Mergenthaler Linotype Co., Brooklyn, N. Y.; Milford M. Hamlin, department of education, ATF Company, Chicago; John G. Henderson, head of printing department, Washburne Trade School, Chicago; C. Harold Lauck, Journalism Laboratory Press, Washington and Lee University, Lexington, Va.; William O. Morgan, director, Chicago Lithographic Institute; Lester E. Reppert, Veterans Administration, Chicago; O. H. Runyon, field secretary, Graphic Arts Association of Illinois, Inc.; Craig R. Spicher, Research Sales Div., Miehle Printing Press and Mfg. Co.; and Fred J. Hartman, educational director, National Graphic Arts Education Association, Washington, D. C.

Patents

For The Graphic Arts Field

Covering patents issued February 4, February 11, February 18, February 25.

All new patents for the Graphic Arts are reported exclusively for Printing Equipment Engineer by Invention, Inc., an industrial patent research organization in Washington, D. C. Invention, Inc., presently has the only staff in the country that examines, in the U. S. Patent Office, the complete printed copy, drawing by drawing and page by page, every one of the several hundred new patents issuing each week. Printing Equipment Engineer is the only trade publication in its field offering a report based on this complete coverage. For copies of the patents listed here specify the patent numbers and send 25c for each separate patent, or 10c for each trade mark or design patent (stamps not accepted) to the Commissioner of Patents, Washington, D. C.

No new patents have been issued pertinent to the usual headings "Binding, Cutting, Perforating," "Composing Room Equipment" and "Feeding, Folding and Delivery" during the period covered by this report.

Plate Making

2,415,424. CAMERA WITH COPY AND IMAGE CENTERING MEANS is of the type used for copying letters, records, maps, etc., and in photoengraving and lithography for reproducing photos, art work, etc. It overcomes the previous disadvantages of devices of this type by using a novel housing to hold the sensitized material or film. A light-excluding curtain or mask is arranged to slide within the housing in such a manner as to uncover at the will of the operator a measured amount of film to the action of the lens and to simultaneously move the lens in the same direction with the movement of the curtain or mask, but at half speed, and to move the copy holder in the same direction at the speed of the lens. The object is therefore always held in the center of the lens and in the center of the exposed portion of the film. Invented by Arthur H. Gaebel, Larchmont, N. Y. Unassigned. Application February 5, 1943. 15 claims.

2,415,450. AUTOMATIC ETCHING MACHINE is used for forming the printing surface of a printing plate from which prints may be made by either intaglio or letter press methods. The machine used embodies a photoelectric scanning device, a mechanism for imparting scanning movement to such device with respect to the surface of a suitably mounted pattern and means for amplifying the electrical impulses developed in the scanning device by variations in the light and shade of the pattern. There is a dynamic head including a cutter continuously reciprocated by a field coil within the head and connected with a source of electrical energy. The cutter is operatively mounted relative to the plate to be etched. The latter is adapted to be moved in synchronism with the scanning device and a floating armature coil in electrical circuit relation with the amplified output of the scanning device limits the stroke of the cutter. Invented by Samuel D. Swann, Army, Fort Belvoir, Va. Unassigned. Application December 11, 1944. 5 claims.

Printing Inks and Related Chemicals

2,415,827 and 2,415,828. TYPOGRAPHIC PRINTING INK disclosed in this patent is characterized by its ability to be set by the application of water to the film. Pigment is dispersed in a vehicle, the major binding component of which is beta naphthol pitch, dissolved in a liquid, water-soluble solvent of the group consisting of polyglycols and polyglycol monoethers. In companion patent 2,415,828, the major binding component of the vehicle is beta naphthol pitch dissolved in propylene glycol. Examples cited use many different pigments and coloring agents including carbon black, lamp black and iron blue toner. Invented by Ernest D. Lee, West Englewood, N. J. Assigned to Interchemical Corp., New York, N. Y. Applications July 9, 1945 and June 25, 1946 respectively. 3 and 1 claims respectively.

2,416,187. PRINTING PASTES CONTAINING NEW DIAZOAMINO COMPOUNDS are obtained by reacting in an alkaline medium a suitable diazotized arylamine with an aminobenzene-acid-alkylol-amide wherein the acid radical is sulfon, carbox or both. The diazoamino compounds thus produced are incorporated with a suitable

GOOD SAILING, like good *selling*, isn't purely accidental. It takes skill and know-how to sail a boat, or make a sale. And, in the case of selling, it calls for good engravings, too.

Engravers realize this. That's why they are so quick to appreciate the advantages which ZOMO ELECTRIC ZINC and A-Z ALLOY offer . . . advantages which aid them in making outstanding engravings that have *maximum sales appeal*.

These qualities include: accurately controlled alloying, electric induction melting and casting to assure uniform texture and clean etching, accurate gauge, machine-cut finish, perfect register for color work.

In any run, you'll find it pays to insist on ZOMO ELECTRIC ZINC or A-Z ALLOY.

You need both of these fine metals.
Order them from leading suppliers.

ZOMO ELECTRIC ZINC ◆ A-Z ELECTRIC ALLOY

azo dye coupling component into an alkaline hydrous pasty composition which contains sufficient printing paste thickener to enable the composition to be printed on textile material. By acidification of such a print, the diazo component is liberated and the dyeing is developed in the material. Invented by Carl W. Maynard Jr., and Emil G. Wiest, Wilmington, Del. Assigned to E. I. du Pont de Nemours & Co., Wilmington, Del. Application August 7, 1942. 5 claims.

2,416,383. FIXATION OF CHROME MORDANT DYESTUFFS can be performed by simple drying, without steaming, according to this process. Dyestuff is dissolved in as little water as possible in the presence of a suitable solvent, such as monoethyl glycol, while adding urea. Solution is incorporated, with continuous stirring, in a nitrocellulose thickener in one of its commercial forms. To the transparent colored mass thus obtained is added an aqueous solution of a chromate and an agent splitting off acid in the heat, such as ammonium sulphate. Paste thus obtained is printed on fabric and strongly dried. The chrome lake is at once completely formed in dispersion by the chromate and the corresponding mordant dyestuff. Prints thus obtained are entirely fast to rubbing and soaping. Invented by Georges de Niederhausern and Ernst Tschan, Basel, Switzerland. Assigned to Durand & Huguenin A. G., Basel, Switzerland. Application November 9, 1942. In Germany November 15, 1941. 13 claims.

2,416,549. STABILIZED PRINTING COMPOSITIONS are formed by this process which results in a print possessing good fastness properties. Composition comprises a diazoimino of dianisidine and a mixed coupling component containing the anilide of beta-oxy-naphthoic acid and beta-oxy-naphthoic acid having a ratio of acid to anilide in the range of about 1 to 19 and 1 to 2.0. In a typical example, a solution is prepared from 73.6 parts of 100% diazoimino from diansidine and methyl glucamine, 130 parts of Naphthanil AS and 176 parts of alcohol, 133 parts of caustic soda (30% by weight), and sufficient water to total 1000 parts. Solution is stirred with 4 parts of Nuchar and 5 parts of Super Cel and filtered. The filtrate is incorporated into a printing paste using tragacanth gum as a thickener. Invented by Francis H. Smith, Woodstown, N. J., and Chiles E. Sparks, Wilmington, Del. Assigned to E. I. du Pont de Nemours & Co., Wilmington, Del. Application July 20, 1943. 5 claims.

2,416,620. TEXTILE PRINTING PASTE can be applied to cloth by intaglio printing plates to produce visually continuous but microscopically discontinuous decorations on the cloth. Formula used in the examples is 3.75 parts urea formaldehyle resin, 11.25 parts alkyd resin, 11.25 parts of toulene, 3.75 parts solvent for the first resin, 7. parts pine oil, 60.5 parts hydrogenated petroleum naphtha, 2 parts indanthrene blue and .5 parts trichloracetic acid. Ingredients are ball-milled for 72 hours and, after four days, product has a yield value of 125 dynes per square centimeter. On printing, the paste can be set by mere aging or by a very short heating. Invented by David M. Gans, New York, N. Y., and John R. Abrams, Jersey City, N. J. Assigned to Inter-Chemical Corp., New York, N. Y. Application May 28, 1941. 4 claims.

HISTORY REPEATS ITSELF

See those tags in this stack of Burgess Chrome Mats? Each one contains a history of the 50 mats above it . . . a history that carries through manufacture from start to finish. And it's amazing how, through a run of thousands of mats, this history repeats itself without variation . . . weight, thickness, moisture content, exactly the same in stack after stack. It's visual evidence of the uniformity of Burgess Chrome Mats . . . uniform quality that makes for uniformly fine reproductions.

A Laboratory Product
BURGESS Chrome MATS

BURGESS CELLULOSE COMPANY
Manufacturers and Distributors of Burgess Chrome and Tone-Tex Mats
FREEPORT, ILLINOIS
Pacific Coast Representative RALPH LEBER CO., 426 Polson Bldg., SEATTLE, WASH.

Printing Presses and Equipment

2,414,803. VULCANIZABLE COMPOSITION is useful in making inking and printing rollers and comprises the thermoplastic product of emulsion polymerization of a mixture containing essentially 25-40% styrene, 40-55% ethyl acrylate and 15-25% 2-methyl-butadiene-1,3. Pigments and plasticizers may be added as desired. Invented by Gaetano F. D'Alelio, Pittsfield, Mass. Assigned to General Electric Co., Schenectady, N. Y. Application September 17, 1942. 6 claims.

2,415,321. DRIVE MECHANISM AND CONTROLS THEREFOR, whereby printed matter being conveyed through a drying oven will continue through the oven even though the press stops. Press and conveyor may be operated independently by separate driving means or brought into synchronism and operated simultaneously by the press drive. A first motor drives the press and a second motor drives the conveyor. A magnetic clutch and a differential gearing connect press and conveyor to

Save cut mounting time with Booth's Zink Cut Cement

You can mount cuts easier and faster,—eliminate risk of out-of-position cuts with handy, easy-to-use Booth's Zink Cut Cement. This economical, one purpose adhesive comes to you in a tough ready tube dispenser.

Keep a supply on hand in your make-up and stereo room.

PRICES: In the United States: 75c per tube, $6.00 a dozen tubes, $5.00 a dozen in gross lots.

Booth's Black Rubber Rolls

Operators sing, machines hum when Booth's Black Rubber Rolls are installed on the keyboard roll shafts.

These rolls are long wearing, responsive, and provide maximum cam tread friction.

For smooth running line casting machines, you need Booth's Black Rubber Rolls.

PRICES: $1.45 per pair
$7.75 per dozen

E. A. BOOTH RUBBER CO.
MAHONING BANK BUILDING
YOUNGSTOWN, OHIO

"Vulcan Press Blankets are better than ever this year"

"We're getting better reproduction with less trouble"

All over America pressroom executives are expressing their admiration for the new 1947 VULCAN Press Blankets.

The important characteristics of these improved blankets are greater firmness, an exceptional uniformity of thickness and a degree of resiliency which is the nearest possible approach to the theoretical ideal.

There is also greater tensile strength in the VULCAN Press Blanket coating compound. This means increased resistance to wear and surface abrasions.

For a sparkling, crisply printed paper with correct tonal values . . . full coverage of halftones, solids and type areas, order your VULCAN Press Blankets now. You will get longer press runs with fewer blanket changes . . . less trouble with impression settings . . . reduced second impression offset . . . freedom from ghosting and bolstering.

VULCAN
PROOFING COMPANY
FIRST AVENUE & 58th STREET • BROOKLYN 20, NEW YORK

gether. A third motor operates the gearing to synchronize the machine and conveyor. A synchronizing detector device in control of the third or timing motor is arranged to de-energize that motor when synchronization is accomplished. Centrifugal switches are closed only when both machine and conveyor are running to engage the clutch and to de-energize second motor. Invented by William C. Wieking, Woodhaven, N. Y. Assigned to R. Hoe & Co., Inc., New York, N. Y. Application November 18, 1944. 18 claims.

2,415,541. SYNTHETIC RUBBER COMPOSITIONS disclosed in this patent are said to be useful for the fabrication or printers' rolls, hose, sheets, etc.; for the preparation of adhesives and cements, and other specialized uses. A petroleum oil gas tar emulsion obtained by the pyrolysis of a Bureau of Mines type 7 naphthenic oil is extracted with liquid propane. After removal of the propane, the extracted oil is flash-distilled. Resultant fraction is then polymerized by heating at 200°C. for 4 hours and the non-polymerized aromatic oils are isolated by distillation. Various pigments and oils are added in the examples, depending of course on the ink desired. Invented by Frank J. Soday, Baton Rouge, La. Assigned to The United Gas Improvement Co., Corp. of Pa. Application February 19, 1944. 7 claims.

2,416,495. DIFFERENTIAL GEAR UNIT for a rotagravure press provides a positive drive, yet makes available a greater number of minutely varying speeds for the feed roller drive. Unit comprises a pair of revolubly mounted coaxial internal gears and a pair of coaxial planet gears connected in fixed relation to one another, each in mesh with one of the internal gears. The output-input ratios of the intermeshing gears are nearly but not quite reciprocals of one another. The planet gears are of such large diameters in relation to the diameters of the internal gears that they intersect the common axis of the latter. An external gear is disposed within, and concentric with, the internal gears to support the planet gears eccentrically within the internal gears. Invented by Thomas E. Piazze, Lyndhurst, N. J. Assigned by mesne assignments to Champlain Co., Inc., New York, N. Y. Application May 3, 1943. 9 claims.

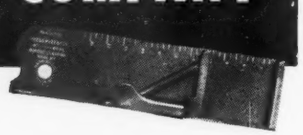
IN 35 SECONDS a Rouse Band Saw cuts a full galley of slugs **to variable measure**—automatically, accurately. No gauge setting is required—no clamping—no measuring! Slugs feed mechanically **at uniform speed.**

Teamed up with a type-setting machine, a Rouse Band Saw does the work of hours in minutes. It cuts sluglines for all types of composition that require frequent changes of line measure.

MITERING MACHINES
COMPOSING STICKS
SLUG CLIPPERS
BAND SAWS
LEAD AND RULE CUTTERS
TYPE GAUGES

Write today for illustrated folder on this and other Rouse time-saving printers' equipment.

H. B. ROUSE & COMPANY
2214 North Wayne Avenue
Chicago 14, Illinois



For greater accuracy—specify Rouse Composing Sticks. An investment in Rouse equipment pays a handsome profit.

For Patent Research in the U. S. Patent Office, or a prompt estimate on any type of search, address INVENTION, INC., Munsey Bldg., Washington, D. C.

Uarco New Plant

A new plant at Deep River, Conn., has been acquired by Uarco Inc., it was announced recently by Walter R. Barker, president.

The additional plant is part of the firm's expansion plans projected for 1947, Mr. Barker said. The building is a modern, four-story structure. It is being furnished with the latest type of equipment used in the production of business forms and it is expected that remodeling and installation work will be completed in time to permit operations in July.

Promotional Piece Attractive

Executed by offset-lith in black and yellow ink with gold lettering on the cover, Detroit's typesetters, George Willens & Co., issue an attractive brochure about the firm's new type specimen book. The brochure consists of four pages (french fold) 17 in. wide by 12½ in. high on heavy crash finish white stock. The front cover shows a closed view of the leather-like bound book. The inside two-page spread shows open pages on which are exhibited two type face series, Weiss and Weiss Bold in the sizes available at Willens. The firm is to be congratulated upon the fathering of such a pretentious folder to promote a type specimen book of high utility.

In the book are shown 330 different faces. To assist in making layouts, the leaves are bound loose-leaf style to facilitate removal for tracing purposes. A quick measuring type chart is provided. Shown in the book in collective form are 90 body type styles, all set in 12 pt. for selection purposes. The only criticism we have to offer about the folder is that it does not contain the address of the company at 457 West Fort St., Detroit 26, Mich.

DIRECTOMAT

The Choice of Leading Dailies for Precision Mat Molding

A few Directomat advantages:

★ DIRECTOMAT molding produces sharper, more uniform mats...makes possible the higher quality reproduction being demanded by advertisers and agencies.

★ With the DIRECTOMAT all color work and fine half-tone work can be molded and completely dried... without shrinkage!...in a single operation.

★ The DIRECTOMAT eliminates stretch of mats...reduces chance of mat buckle...can produce dry mats with the same shrinkage you now get.

★ The DIRECTOMAT equipped for double-sided operation has the capacity of two mat rollers...requires the space of only one.

More and more DIRECTOMATS are being installed by leading dailies in the United States and abroad...because DIRECTOMATS are demonstrating day after day in actual newspaper plant service that they offer definite advantages over other methods and types of equipment. Nearly 150 DIRECTOMATS are already bringing these advantages...and others...to leading newspaper and commercial plants. If you are interested in these advantages—interested in improving reproduction today ...providing for R.O.P. color work now or later—write to Lake Erie for complete facts on the DIRECTOMAT.

LAKE ERIE ENGINEERING CORPORATION
568 Woodward Ave., Buffalo 17, N. Y.
Offices in Principal Cities and Foreign Countries

LAKE ERIE
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Leading manufacturer of hydraulic presses—all sizes and types—stereotyping...plastic molding...processing...rubber vulcanizing...metal working...forging...metal extrusion...special purpose.

Vari-Typer* looks like a typewriter...is operated like one...has the same standard keyboard. And it's inexpensive. But that's where the resemblance ends. For Vari-Typer is a Composing Machine that gives you the professional variety, crispness of type-set matter, and clean appearance.

It's the changeable type that does it—over 300 styles and sizes. Each of these fonts is complete on a small individual metal segment. You can change fonts in a second or two from, let's say, an 19 point heavy gothic headline...to a 12 point bold subhead...to an attractive, compact 8 point text type. You can spice your copy with *italics*...you can space it as you like, horizontally and vertically.

Copy unrolled from Vari-Typer is sharp, clean reproduction copy, with automatically justified right and left margins. It is ready to run off in offset or duplicating machines. Ready to distribute the same day if you wish!

Vari-Typer often pays for itself in a few weeks ...then brings in steady profits. Its speed and flexibility make it ideal for booklets, promotion pieces, bulletins, forms, rate cards, price lists, form letters, questionnaires, house magazines, hundreds of other jobs.

Ask us for a free demonstration at your office or plant...write for a variety of Vari-Typed samples...to Dept. PE-4, Ralph C. Coxhead Corp., 333 Avenue of the Americas, New York 14.

Text copy set on Vari-Typer in the Bodoni Series.

**Reg. U.S. Pat. Off. & foreign countries Marca Registrada Marca Deposee*

Vari-Typer

Composing Machine

RALPH C. COXHEAD CORPORATION
DEPT. PE-4, 333 AVENUE OF THE AMERICAS, NEW YORK 14, N.Y.

Neglected Costs in the newspaper plant — Suggestions made by production executive

By LEON A. LINK*

**Production Manager Cleveland* Plain Dealer, *Abstract of address delivered before the Ohio Press Association, Columbus, O., February 1947*

MANAGEMENT in many newspapers knows too little about its production because no records have been kept. Where that situation exists, one can only guess as to the output per man or the production of the department. It does not require a lot of complicated bookkeeping to keep certain production records. Other successful manufacturing enterprises keep these records and few have the high hourly wage costs that prevail in the plants manufacturing newspapers. You are not going to locate many of your ills, until you have an accurate diagnosis.

Some of our inefficient methods and operations have been with us so long that we have become blind to their existence. I believe we can bring about improvement by applying successful manufacturing practices to our business.

Many years ago, newspapers learned that it was good operation to put typewriters in their editorial departments and send typewritten copy to the composing room. It speeded up composition on the typesetting machines and reduced errors in the printed stories.

Those same newspapers send their want ad copy to the composing room written in longhand. Often it is of such poor quality, and is of so many different styles of handwriting, that it takes the combined effort of the typesetting machine operator, his neighbors at the machines on both sides, the proofreaders, and, as a last resort, the foreman in an effort to determine what the writer intended. While all this is going on some very expensive equipment is standing idle. Those want ads are paid advertising, and they are very important to the seller and the prospective buyers. The series of guesses which I just mentioned often fail, and the wrong information appears in the ad. So, besides the time lost in trying to decipher the copy in the composing room, we do not get paid for the ad and the advertiser is disappointed, sometimes very mad.

I know some are going to say that it will take more time if ads are typewritten in the Want Ad Department. I doubt that, but maybe it will. I know the hourly rate in most composing rooms is considerably higher than that paid the girls in the want ad department. Most manufacturing institutions would figure out how a certain operation could be done most accurately and with the least cost to the institution. I believe many of you can, and should, do something about correcting this costly and inefficient practice.

Much newspaper display copy is very bad and some almost impossible to read. We need to give more attention to the bad copy. Some ads take twice as long to set because of poor copy. Those same ads generally require more revisions on the proof because the advertiser does his laboratory work on the proof instead of on the copy. Maybe he does not know how to write copy. If not, what about the salesman who is handling the account? He is supposed to know something about it.

It ought to be a part of the salesman's job to see to it that the copy is in decent shape when it is sent to the composing room. Would any other manufacturing institution permit one department to continually pass on to the next department, unsatisfactory and time consuming materials? It is a definite rule in other kinds of manufacturing that the part or appliance (in our instance the copy) made in the department must pass inspection, or at least conform to some kind of a standard, before being sent on to the next department.

Foremen Need All Help They Can Get

A couple of months ago I was talking to a composing room foreman of a very

IT'S TIME FOR *You* ALSO TO

Get ready

ORDER YOUR -

AMERICAN SUMMER

COMPOSITION ROLLERS

Comes Easter . . . comes summer . . . comes weather so hot ordinary rollers just can't stand it! Don't be caught in that predicament. Take action right away about your summer rollers. Do as hundreds of leading printers do . . . get AMERICAN pre-conditioned quality this summer.

AMERICAN Summer Composition Rollers have what it takes. You'll find them durable, capable, dependable day after day because these qualities are built into them here in our modern, scientific plant. They'll give you service because they've got service to give. They're a superior product of superior roller craftsmen . . . and they act the part. Order them and see the difference.

AMERICAN ROLLER COMPANY

1342 NORTH HALSTED STREET, CHICAGO 22, ILLINOIS
225 NORTH NEW JERSEY STREET, INDIANAPOLIS 4, INDIANA

OUR NECK IS OUT—

every time you cast a slug

Imperial assumes the responsibility for type metal performance in every Imperialized shop—that's why we say "our neck is sticking out". Imperial's Plus Plan checks metal composition, anticipates unbalance before it happens, automatically compensates for changes of content due to drossing—then checks again to see that the Plus Plan system is operating properly.

Because of this control, the service metal is maintained in fighting trim; because of our experience of years, we know the dependability of metal properly controlled; that's why, as soon as the first pound of Imperial Type Metal enters your shop, Imperial assumes the unconditional responsibility for that metal's performance. Will you let us stick our neck out in your shop?

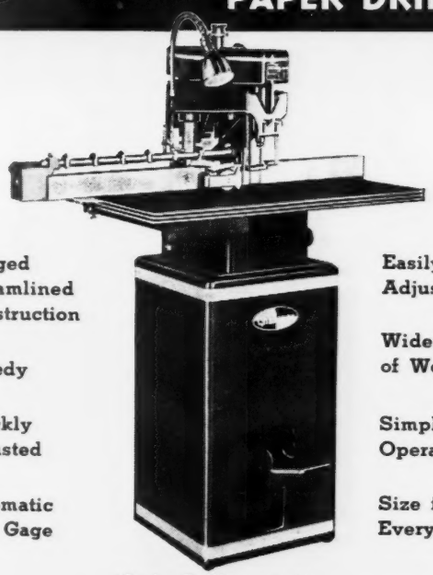
IMPERIAL TYPE METAL CO.

Serving the Graphic Arts Industry Only

Philadelphia 34 **New York 7** **Chicago 50**

Imperial

● *Eliminate*
PRODUCTION BOTTLENECKS
● with
CHALLENGE
● **PAPER DRILLS**



Rugged Streamlined Construction

Speedy

Quickly Adjusted

Automatic Trip Gage

Easily Adjusted

Wide Variety of Work

Simple to Operate

Size for Every Shop

(Style E Illustrated)

● *Step-up* **SALES** *and* **PROFITS**

Make Your Shop Independent of Crowded Binderies—

● Buy a Challenge Paper Drill to fit the needs of your plant and avoid those troublesome delays in the bindery. With attachments you can do all classes of slotting, slitting and cornering as well as round hole drilling. Thus allowing you to do novelty work of all kinds.

Automatic Trip Gage can be pre-set for any arrangement of holes up to six or more stops, allowing operator to keep both hands on stock. Motorized drill head operated by hand lever, foot power, or electro-hydraulic mechanism.

Orders are being scheduled for delivery in the sequence received. *Place Your Order Now!*

539

THE CHALLENGE MACHINERY CO.

"Over Fifty Years in the Service of the Graphic Arts"

Main Office and Factory: **Grand Haven, Mich.**

good newspaper in another state. I asked him what they were doing to reduce the cost of resetting ads, because of changes made on the proofs. He said that he had been kicking about it for years and it seemed to be getting worse instead of better. He closed the conversation by saying: "I am told that I am doing too much crabbing, and why don't I smile and forget it?" It was my impression that he had about made up his mind to smile. When your composing room foreman, or the foreman of any other department, gets to the point where he is going to forget to "crab" about things that increase his costs and smile instead, then you are going to pay plenty for those smiles. Your foremen, in all the mechanical departments, need all the cooperation you can give them. Their job under present operating conditions, is tougher than it has ever been at anytime in the history of the business.

While I am on the subject of copy I don't want to overlook the Editorial Department. Some of that copy, even though most of it is typewritten, is so marked up and rewritten that it also is a contributor to increased operating costs. In most every editorial department there is a girl or two who seems to have some extra time. Why not have her retype that scrampled up mess that the editorial people now are sending to the composing room for the operators and proofreaders to struggle with? She is in the news department, where she can easily contact the copyreader regarding the mysteries in the copy. If you do that, then your operators will at least have the opportunity to produce, instead of devoting time trying to decipher the scratches and scribbles they now often have to contend with. Some newspapers require that all heads of copy be written on typewriters. Some of the boys who are doing it that way tell me they can do it just as fast, if not faster than by scratching it out in longhand.

You are probably telling yourselves, "Yes we know all about those things, but how is it to be cured, what is the best way to get at it?"

If you make an operating cost charge against the advertising sales department, for all resetting of ads, because of the advertiser changing his mind, or engaging in laboratory work on the proof, or possibly for extra time consumed because of bad copy, then the head of the advertising department and the men handling the accounts are going to have considerably more interest in helping to eliminate that waste. If you do the job as every other manufacturing enterprise does it, you will also pass additional or unnecessary costs on to the customer—in our case the advertiser; not to all advertisers, but to the one who demands this costly extra service and is responsible for the increased cost.

Cost Responsibility

If the Editorial and News Departments were held cost responsible for all overset, resetting, changing of minds, killing out of type and the other wastes that occur, they might find some of these operations unnecessary, or they might plan better in order to prevent it.

Publishers have a job to do in making sales and editorial people manufacturing-cost conscious. It has not been a part of their job to be particularly concerned about that. The advertising man may be much concerned about a salesman's cost of entertaining advertisers or the discount paid an agency, because it comes out of his department's pocket. The editorial man may be concerned about the expense of sending a reporter to cover a story or the cost of a new feature, because his department is responsible. It has been my experience that they do not give much thought to how much it costs to set a lot of news type, or ads, or make a lot of cuts, and remake pages.

I don't think the heads of mechanical departments should be relieved of any of the cost responsibility that is properly theirs. I do believe, however, that it would result in better operation and reduced costs to the institution, if the responsibilities that are not theirs were placed where they belong.

Future Executives?

It seems to me there are far too few people in our newspaper mechanical departments who are interested in becoming foremen, superintendents or department managers. Many of the people who are on those jobs today will not be holding them down within a few years, because the passing of years and the act

EDES LEADS IN THE ETCHER

The amazingly uniform structure of Edes photoengraving zinc is proved in the etcher. All portions of the flat etch equally; none more or less than others. There are no bad places in the metal to nurse and waste time on. Etching and re-etching are greatly simplified and speeded. Finishing is minimized. In use, the plates stand up better, don't break down in spots. Use Edes zinc — Regular, for most requirements, and Hard Matrix, for matrices and heavy duty.

THE Edes MANUFACTURING COMPANY
PLYMOUTH, MASS. U.S.A.

REPRESENTATIVES

CHEMCO PHOTO-PRODUCTS COMPANY
New York, Atlanta, Dallas, Chicago, New Orleans, Boston

ALLAN B. CROKE CO.
Boston

W. OLIVER TRIPP CO.
Boston

C. S. ILLINGWORTH
Buffalo

MRS. S. H. CLARK
Fairview Village, Ohio

G. C. DOM SUPPLY CO.
Cincinnati

J. W. FEINSTEIN
San Francisco

MID-WEST PHOTO ENGRAVERS SUPPLY CO.
St. Louis

THOMPSON-HAYWARD CHEMICAL CO.
Kansas City

E. H. WALKER SUPPLY CO.
Washington, Richmond

EDES ENGRAVING METALS
Regular Zinc
Hard Matrix Zinc
Triplemetal
Copper
Brass
Gravure Sheets

The bigger HIS pay check the more YOU need . . .

HAMILTON EQUIPMENT

● The more this man earns per hour the more valuable his production per minute . . . and the larger your savings with Hamilton equipment.

With Hamilton Cabinets each of your compositors puts in *more* minutes per hour at the work he is trained and paid to do because he *wastes fewer minutes* hunting from alley to alley for leads, slugs, rule, spaces, quads and other materials he needs.

Hamilton Cabinets are specifically designed to enable any compositor to work more productively. Properly stocked, they provide, within easy reach, all of the materials a compositor is likely to require for a day's work.

Hamilton equipment also enables more work to be done in less floor space, by providing maximum storage and working capacity in minimum floor area.

Ask your Hamilton dealer for a copy of Hamilton Catalog No. 23 containing complete descriptions of Hamilton Type Cabinet Assemblies and optional arrangements. Or write direct to us.

HAMILTON
MANUFACTURING COMPANY
TWO RIVERS, WISCONSIN

. . . OUR NEW HOME OFFICE ADDRESS IS:

2 SOUTH MAIN STREET

SOUTH HACKENSACK
NEW JERSEY

(Instead of WEATHERLY, PA.)

WE are happy to announce that our new plant in SOUTH HACKENSACK now houses the Home Office and Shipping Department of the Company.

While a branch plant is being maintained in our Weatherly, Pa. building, all business is now transacted from the new plant.

The new building of 36,000 Sq. Ft. especially designed for the expanding manufacturing operations of the company, also has improved and enlarged facilities for shipping and administrative departments. We expect the greater efficiency gained thereby, will make our service more prompt and complete than ever.

A cordial invitation is extended to all to visit the new home of "STAR" PARTS.

What the machinist likes about ACE-BELTS is that they don't stretch.

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of getting old will always be with us. We are going to need men within a few years to take over those jobs. Too few are being trained. It is a waste of time to force those jobs upon men. The man must be interested in qualifying himself to hold the position. He will be of little value unless he really wants the job. I am not blaming this lack of interest of the men upon management because it seems to be a product of the times. It will, however, be management's business to have the qualified men available to handle the jobs one of these days. We cannot wait until we need the man. It takes time to get the man ready for the job.

I want to re-emphasize this one thought. Let's be a little more institutionally cost concerned. Let's not measure the value of a department entirely by how economically it may have operated, without consideration to how much additional cost their operation may have caused in other departments. This does not apply to sales and editorial departments alone—it also includes the different mechanical departments. It will be a healthy tonic throughout the institution, if the head of every department knows that you know, when his department has passed on a $2 cost to some other department, in order that he might save $1.

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FOREMEN A PART OF MANAGEMENT

IN A recent statement, President A. C. Croft of the National Foremen's Institute observed: "To win the other half of the struggle to keep foremen as a part of management, industrial executives must see to it that more foremen are taken out of the insecure role of straw bosses and given a responsible part to play in labor relations and the daily supervision of employees."

Mr. Croft referred to the recent Supreme Court ruling in the Packard case. He also observed that the ruling may lead Congress to amend the Wagner Act and exclude foremen's unions from its coverage. It is commonly known that in the printing industries foremen are required to belong to their craft unions. In many plants in the printing industry, foremen do have complete supervisory charge of their departments; they are also consulted by management in labor relations and in welfare programs. Our interest in printing Mr. Croft's statement is to indicate that foremen in general industry are not regarded on a similar plane to that of the Graphic Arts industries. Irrespective of printing's custom with respect to foremen we congratulate him upon his attitude that foremen really are of more importance than is granted by industrial executives generally.

Annual Report

The annual report of Uarco Inc., manufacturers of continuous business forms and systems, reported net earnings after taxes during 1946 of $606,936 compared with net earnings of $402,137 for 1945. Earnings for 1946 amounted to $2.03 per common share for the 298,483 shares outstanding of which $1.20 per share was paid as dividends.

Northwest Conference

(Continued from Page 34)

papers are loaded in the order in which they are to be unloaded, Mr. Menard said, and cited the Chicago *Tribune* and Cleveland *Plain Dealer* as two places where this loading is done effectively.

Discussing tying equipment, Mr. Menard described the spot-weld ma-

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by I. H. Sayre

This is both an instruction book and an encyclopedia for offset-lith platemakers. Text in the book serves both as an instruction book for the beginner and as a reference book for the experienced platemaker. This revised edition contains new techniques, procedures and discoveries of methods. A new section on color process platemaking techniques has been Added. Albumin and deep-etched platemaking techniques explained carefully. Every phase of offset-lith platemaking included.

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chines, both the small Gerrard and the larger Toronto machine. They do their job so well, he said, that a bundle of papers dropped from the top floor of a building would still remain tied when they lit insofar as the spot weld tie is concerned. Tying machines now in use in Milwaukee, the speaker said, are equipped with automatic pushers which push the bundle into the tying machine where it is tied without the aid of a man. One disadvantage of this machine, he said, is that it will tie the bundle no matter how the wrapper may be on.

Mr. Menard repeated the view he has previously taken, that the mailing room, because of the great amount of mechanical equipment which it operates, is properly a mechanical department of the paper. In line with this, he told of power lift trucks now used to handle papers in the mailing room twice as fast as they could be moved by hand and of new conveyors, one three-way, recently developed and another like an extension ladder that loads papers from the front of the truck backward by layers. He also described a new inserting machine that even drops out the papers in which inserts have been missed.

Annual Banquet

Sunday closed with the annual banquet in the main ball room with Conference President Brown presiding at the after-dinner speaking program and turning it over to Master of Ceremonies George Grimm, Minneapolis *Star and Tribune* columnist, who introduced the guests. The speaker of the evening was Gideon Seymour, vice president and executive editor of the *Star* and *Tribune*.

Mr. Seymour pointed out that newspapers have lagged behind both radio and the news weeklies in their presentation of the news, not getting it out as fast as the radio and not editing it as well as the news weeklies. In spite of this, he said, radio, instead of operating to the detriment of newspapers, has actually aided them by creating greater reader interest.

Mr. Seymour warned that editors and mechanical department men must be better scientists in the science of newspaper publishing. Nobody in the publishing business, he said, need fear the future if he keeps alive and flexible to the changing trends.

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Stereo and Press Clinic

LAST clinic of the conference, that for stereotypers and pressmen, was held at 9 a.m. Monday, February 17, in the Junior ball room, with Edward F. O'Neil, Pressroom Superintendent, *Star* and *Tribune*, and Lawrence Kameron, Stereotype Superintendent, St. Paul *Dispatch-Pioneer Press*, as co-chairman.

Mr. O'Neil opened the meeting and introduced Don E. Crews, Vice President of Sam'l Bingham's Son Mfg. Co., Chicago, who discussed the functions of press rollers and press troubles involving rollers.

Ink Distribution

The basic function of rollers is the distribution of ink, the speaker said, and explained that because of the tendency of ink particles to cluster and precipitate, it is necessary that the rollers break up these clusters. The inking mechanism of a press is predicated upon the phenomenon that ink, when it goes on the rollers will spread from roller to roller and surface to surface until an even film has coated every surface with which it comes in contact. It is an equalizing process, Mr. Crews said, and cautioned that this fact is important to bear in mind when considering what ink and rollers must do.

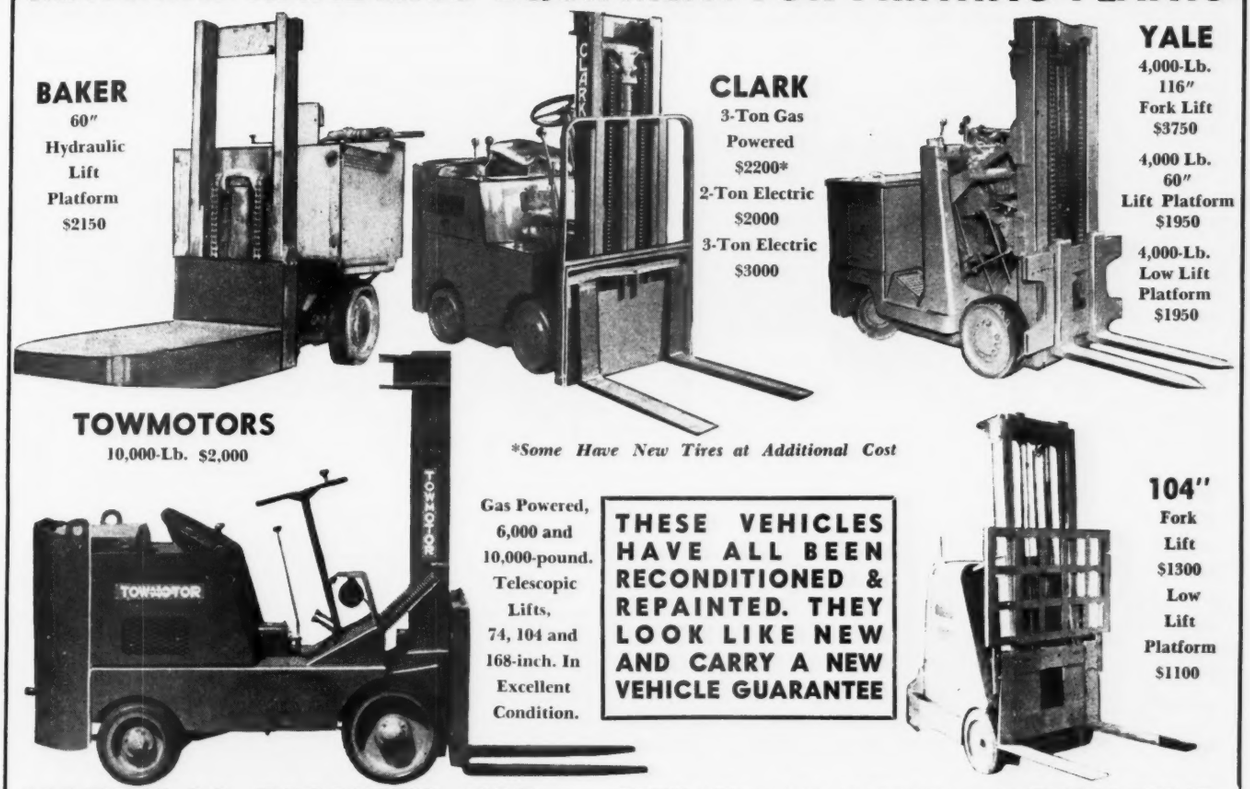
Ink, as it goes onto the roller is laid on like the threads on a bolt, Mr. Crews explained, a pattern that is quite distinct in the case of varnish base inks, less distinct in oil base ink. It is the job of the rollers, including the vibrating rollers, he said, to break up this pattern and smooth the ink out.

First Requisite of Rollers

First requisite for a roller, the speaker said, is that it have an affinity for ink. In glue and glycerine rollers, this affinity is

(*Continued on Page 64*)

MATERIAL HANDLING EQUIPMENT FOR PRINTING PLANTS



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Skilled artisans fashion 90 per cent of R. Hoe & Co., Inc., letterpress, offset and rotogravure printing press parts in full size wood or aluminum patterns for use in the iron foundry. Here two craftsmen complete an ink fountain pattern and core box. They will be used by the foundry in the fabrication of an ink fountain for newly designed Hoe rotogravure presses.

Production of R. Hoe & Co., Inc., large rotary publication and newspaper printing presses is made possible by the skilled work accomplished in their well-equipped pattern shop. Patterns, cores, and core boxes are turned out varying from pieces that can be placed in the palm of a hand to sections that tower overhead.

Peep Into Pattern Making Activities in Plant of R. Hoe & Co., Inc.

EXPERT pattern making makes construction of R. Hoe & Co., Inc. printing presses possible. Skilled artisans fashion 90 per cent of the press parts in full size wood or aluminum models, or patterns as they are called, for use in the iron foundry. To those of our executive readers who have never witnessed the operation, some idea of the effort involved can be realized by picturing one of these presses which, when completed, often weighs 275 T., measures 125 ft. in length, and towers over its foundation. When blueprints are received from the engineering department, a consultation is called for the pattern department and the foundry to determine the best method of making castings that will conform to Hoe specifications of standards and quality, and will pass in the inspection department after they have been machined. Through the years, a conference prior to production has led to a pooling of ideas and a mutual understanding of problems. Better quality and faster work has been the result.

After the production technique has been determined, assignments are given master craftsmen who see the work through to its completion. Employing electrical, mechanical and hand tools, minutely detailed patterns and core boxes are produced.

The patterns turned out vary from pieces that can be fitted into the palm of a hand to sections that tower overhead. Large or small, the patterns receive the same painstaking treatment.

When finished, the core boxes are sent to the core room, and the patterns to the foundry. Small core boxes are rammed with an oxidizing oil and silica sand. When the core box is removed, the sand core which remains is baked from two to six hours in order to achieve sufficient strength to withstand the flow of metal during the pouring of the casting.

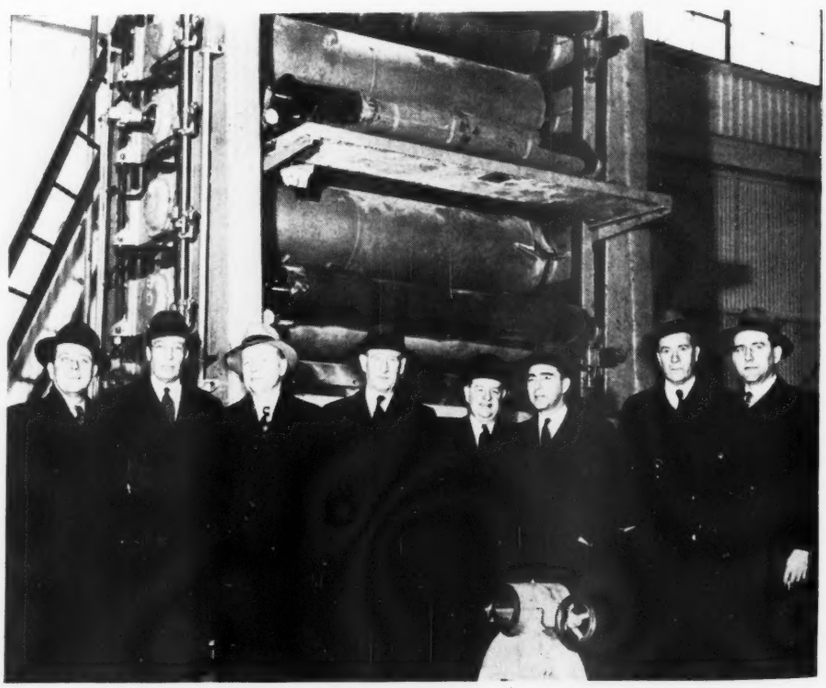
From the pattern, molds are rammed with a molding sand mixed with a pitch compound. These semi-hard sand molds are baked and assembled in the foundry with the cores where molten metal is poured into the mold. After cooling, the castings are sent to other shops for sand-blasting, chipping and machining. Many of them are placed in a furnace which normalizes the metal in order to relieve all stress and strain. Finally they are sent to the erection floor to be incorporated into a larger unit.

Completion of this work must be synchronized so that the finished parts arrive on the erection floor at the exact moment they are needed. If they are delayed in delivery, an assembly line slow-up results. If they arrive early, a costly accumulation of finished parts occurs.

Great responsibility for the smooth-running production sequence rests with the pattern shop. A small error in the timing or fabrication of a pattern could cause a breakdown of an entire press unit valued at thousands of dollars.

LNA Convention

The annual convention of the Lithographers National Association will be held at Saranac Inn, Saranac, N. Y. The dates are from June 3 to 6. In addition to accommodation at the Inn, cottages will be available.



Inspecting the new coating plant of the Bryant Paper Co. in Kalamazoo are the officers and members of the board of directors of Time, Inc. The trip was made at the time of the transfer of the paper mills in which Time, Inc. had an interest to the St. Regis Paper Co. Left to right: David Brumbaugh, vice president and secretary; Artemus Gates, board member; Maurice T. Moore, chairman of the board; William Griffin, board member; Robert A. Chambers, board member; Roy E. Larsen, president; Samuel W. Meek, board member; and Charles Stillman, vice president and treasurer.

TECHNICAL BOOKS

The books listed below may be ordered through Printing Equipment Engineer, 1276 W. Third St., Cleveland 13, Ohio. Because of narrow handling margin, please send remittance with order.

GENERAL

MATERIALS HANDLING—By Harry E. Stocker. This book is of vital interest to mechanical and production executives in printing and publishing plants. While not written specifically as a treatise on materials handling in the printing plant, yet a great deal of its text will be of value in the handling of materials in the plant and out-going shipments from the plant. Bound in light buckram, 309 pages, many illustrations, size 6 in. by 9¼ in. Price $5.35

READING AS A VISUAL TASK—By Matthew Luckiesh, D.Sc. and Frank Moss, E.E. Most important research work to have been published in many years. For printers, designers, publishers, typographers and layout men. Readability of type, type faces, length of line, leading between lines, paper, ink, printing method and lighting are some of the factors involved in ease of reading. Size 5½ in. by 8⅜ in., 428 pages, bound in maroon gold stamped cloth. Price $5.

STANDARD BOOK ON ESTIMATING for PRINTERS—By Fred W. Hoch. Revised 1941 edition. This book is a primer for students and a reference for printers and estimators. Every printing plant should have a copy. Author explains all operations in commercial printing plant and shows production time allowance for each in hours and decimal hours. Size, 6 in. by 9¼ in., 268 pages, $3.75.

HOW TO HANDLE COLLECTIVE BARGAINING NEGOTIATIONS—Report based on a survey conducted by the National Foremen's Institute. Points out errors and fallacies which have tripped management in the past and how to avoid these mistakes in the future. Multon binder. 42 sheets, 9½ by 11½ in., $5.00.

HOW TO HANDLE LABOR GRIEVANCES—By Dr. John A. Lapp. Dr. Lapp discusses a practical treatment in the five part manual. Titles of the parts are: Background and History of Grievance Procedures; Grievances and How to Deal With Them; Grievance Procedures in Selected Industries; and Problems of Grievance Procedures. Bound in buckram cloth, 294 pages, 5½ by 8 in., $4.00.

GRAVURE

PHOTOGRAVURE—By H. Mills Cartwright. Covers all of photogravure's basic principles in concise and readable language. Rotogravure receives minor discussion but this is generally considered best textbook on photogravure process. Contains 202 pages, 34 illustrations, maroon cloth, size 6¼ in. by 9¼ in., $3.50 per copy.

STEREOTYPE

MANUAL OF STEREOTYPING—By Joseph Goggin. This 256-page book conveys technical information and manipulating procedure. Written by a practical stereotyper. Price $5.00.

OFFSET-LITH

LITHOGRAPHERS MANUAL—Compiled by Walter E. Soderstrom. Second revised edition. Technical information from copy to finished job. Nationally known technical men contributed the bulk of practical camera, platemaking and presswork information. Size 8½ in. by 11¼ in. Bound in red cloth, gold stamped. Many of the 368 pages are illustrated. Price $5 per copy.

THE SINGLE COLOR OFFSET PRESS—By I. H. Sayre. The purpose of this book is to offer a detailed technical explanation of the operation of the small single color offset printing press. It also carries recommendations for approved methods of printing technique and press care which apply to all offset printing. Much of the technical operating information applies to all makes of small offset presses.

Section I deals with Harris offset presses.
Section II deals exhaustively with materials used in offset printing.
Section III deals with ATF's Webendorfer single-color offset presses.

Illustrated with 99 figures in line and halftone; 284 pages; size, 6 in. by 9¼ in.; bound in blue cloth, cream stamped lettering. Price $6.

PHOTOGRAPHY AND PLATEMAKING FOR PHOTO-LITHOGRAPHY—By I. H. Sayre. This is an instruction book and an encyclopedia, both for the beginner and the experienced offset-lith platemaker. Revised edition. Illustrated. New section on color process platemaking techniques included. Price $6.00.

PRESSROOM

PRESSROOM PROBLEMS AND ANSWERS—By Fred W. Hoch. Might be considered a miniature encyclopedia since it contains answers to 334 pressroom problems which have been answered by Mr. Hoch. Written in language of journeyman pressman. Pressmen, production men, paper and ink manufacturers, electrotypers and photo-engravers will find this book of high utility when pressroom problems arise in which tendency is to lay blame on furnished materials used in pressroom production. Size, 6 in. by 9½ in., 258 pages, gold stamped blue cloth. Price, $3 per copy.

HOW TO ADJUST WORK-UPS—By Wm. H. Lichter and Geo. F. Smalley. Booklet consists of 24 pages in which are analyzed and remedies are given for prevention and/or elimination of work-ups. Material written as result of actual plant experience. Size, 5¼ in. by 7¼ in. Price, $1 per copy.

HANDBOOK FOR PRESSMEN—By Fred W. Hoch. Book written by authority on all phases of flat-bed letterpress production for the practical pressman. Contains 248 pages, 26 illustrations and 24 charts, $3 per copy.

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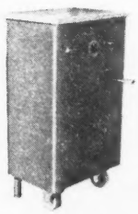

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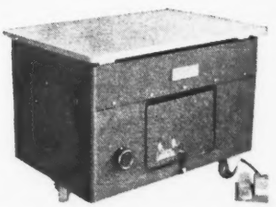

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(*Continued from Page 60*)

the tack, while rubber rollers have a natural affinity for ink. In addition to this affinity for ink, the roller must have a suction property to break up the ink structure. The glue and glycerine roller has this property more than the rubber roller, he said, but added that due to the extra suction and drag, the glue and glycerine roller is more likely to heat up and sag on a long, fast run.

The ink equalizing process, the speaker said, depends upon the rollers being straight, round and concentric and one poor roller in an assembly can lower the efficiency of all of them, because at that point the equalizing process becomes defective.

Setting Rollers

Regarding the setting of rollers, Mr. Crews said that they must not be so tight as to squeeze the ink back instead of permitting it to pass between them, because the retarded ink is likely to go through in a lump. The rollers should be set as light as possible consistent with good impression, he said, adding that when they get so out of true that the setting has to be closer than 4 lines it is time to regrind.

Going briefly into the general care of rollers, Mr. Crews warned against long storing of them because of the danger of drying out, especially in the case of the glue and glycerine roller. Alternating rollers will help to prolong their life, he said, as will keeping them clean and washing them properly. For washup he recommended gasoline with a light oil or kerosene added to retard the evaporation.

Concerning Printing Value of Two Kinds of Rollers

While there are a great many opinions on the matter among pressmen, Mr. Crews said that he could see little difference in printing value between the rubber roller and the glycerine and glue product. He cited one case where opin-

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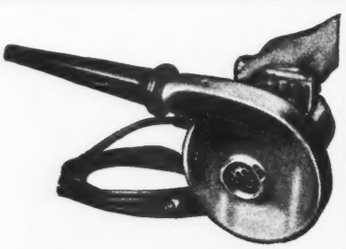

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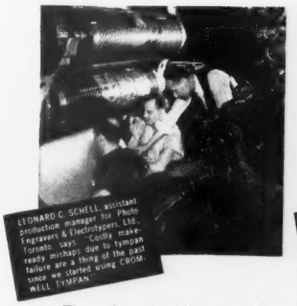
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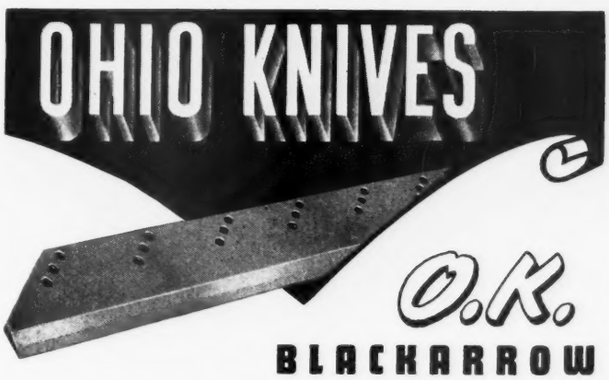
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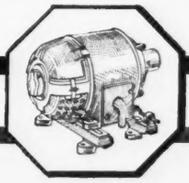
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ions clashed because of conditions. The press builder had specified that certain rollers in the assembly must be rubber, but the user of the press would not permit rubber rollers to be used because of the fire hazard on the long, fast runs which he was doing. Later on in the question period, Mr. Crews explained that rubber rollers present a greater fire hazard than the glue and glycerine because rubber has an affinity for oil which the other roller does not possess. The rubber roller, therefore, becomes saturated to the core with oil, while the oil stays on the surface of the glue and glycerine roller. As a result, when the rubber roller gets heated to the ignition point it will burn completely through, whereas the oil merely burns from the surface of the glue and glycerine roller, then the fire goes out.

When synthetic rollers were first introduced, the speaker said, it was the belief of many persons that they were substitutes for rubber instead of filling a separate need. There is actually no such thing as a synthetic rubber, he said, pointing out that none of the so-called synthetics have a formula at all resembling that of natural rubber. The synthetics are made up of certain resins and other materials compounded and blended together, he said.

Craighead Discusses Paper

Next speaker was Alex Craighead, of the G. H. Mead Co., Dayton, Ohio, who discussed the current newsprint market with regard to supply and price. He told how the 1913 repeal of the duty on Canadian newsprint had started the American newsprint industry on its decline—a decline from which it has never recovered. Now, he said, we are chiefly dependent on Canada for our newsprint, the industry there having expanded as our own went down. Part of the reason for the present shortage of newsprint, he said, is that Canada is satisfied with the $85 per ton price and has no desire to increase production facilities, her present ones now operating at capacity.

The stereotyping phase of the clinic was a question and answer affair with Mr. Kameron presiding. One of the major questions raised was what causes the curling of mats and what can be done to prevent it. The consensus was that the heat was probably too high in the prescorcher and that there was improper regulation of heat in the master scorcher (several recommended 150 deg. for the master scorcher). Also recommended was predrying of 1½ min. before placing the mat in the Stahi and carrying a vacuum of 3½ in. in the preshrink.

Another problem that brought a variety of suggestions was the matter of leaders punching through. Recommended cures for this included the use of tape on the back and the use of cellophane to cover sharp edges.

The question was raised whether the arch on the shaver should be run hot or cold. Best practice seemed to be to run it cold. The ever-present question of blowholes in plates came up again and got the same answer as before—sometimes they are there, sometimes not and there seems never to be a solution:

Final Session

Final event of the conference was the luncheon at 1:00 p.m. in the Minnesota Terrace with Mr. Brown presiding. Short talks were given by Harold E. Perkins, Business Manager of the Minneapolis *Star* and *Tribune*; Joyce Swan, Publisher of the Minneapolis *Daily Times* and B. H. Ridder, Jr., General Manager of the Duluth *Herald* and *News-Tribune*.

Mr. Ridder extended an invitation to the conference to meet in Duluth in 1948.

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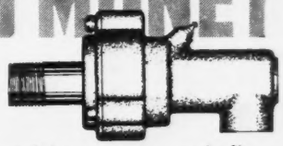

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